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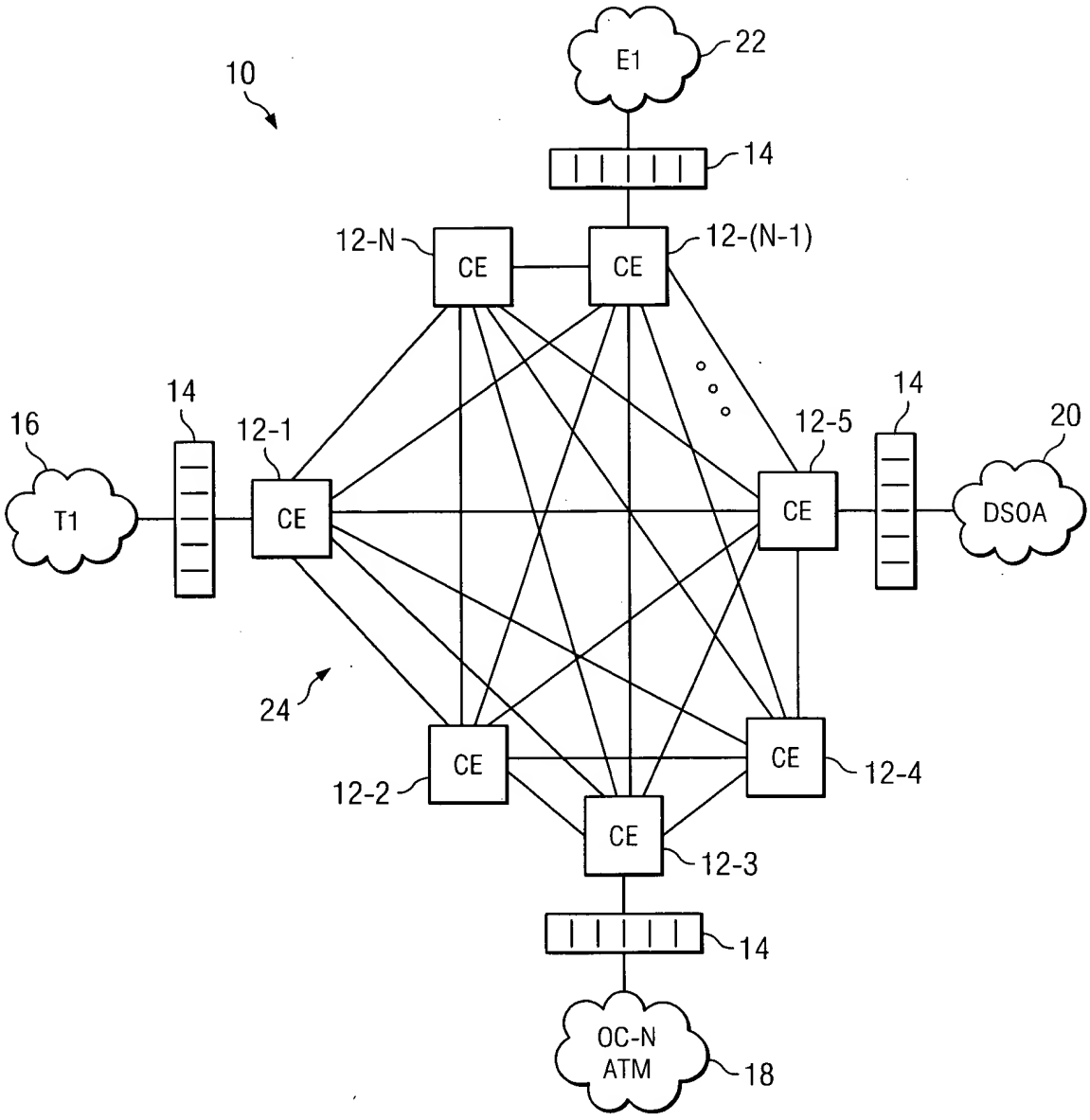
PATENT & TRADEMARK OFFICE

FIG. 1



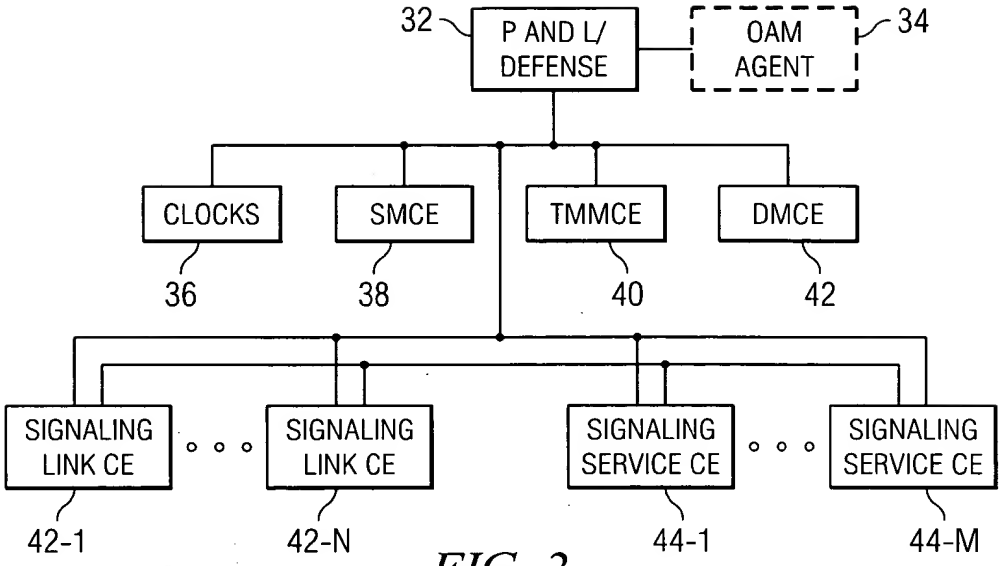

32
P AND L/ DEFENSE
OAM AGENT
34
CLOCKS
SMCE
TMMCE
DMCE
36
38
40
42
SIGNALING LINK CE
SIGNALING LINK CE
SIGNALING SERVICE CE
SIGNALING SERVICE CE
42-1
42-N
44-1
44-M

FIG. 2

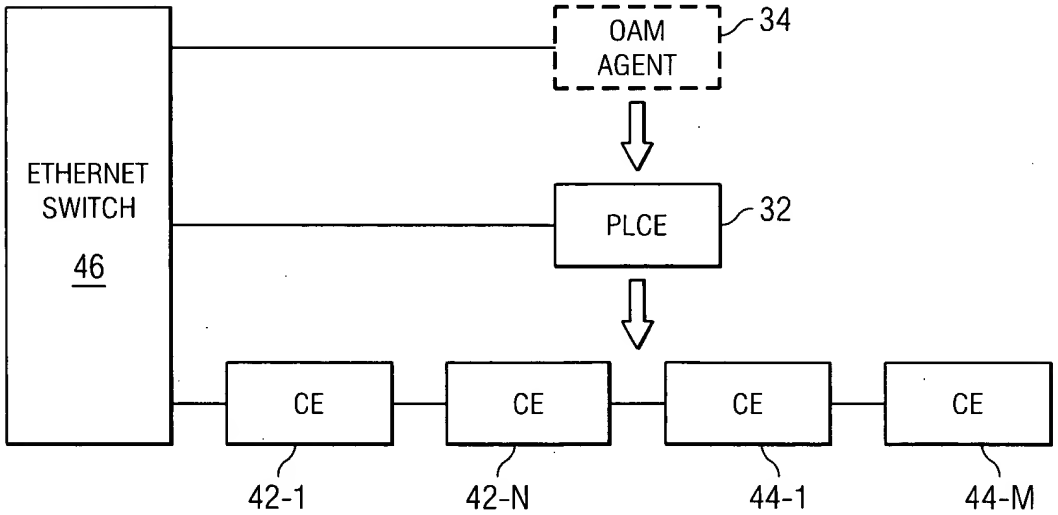

ETHERNET SWITCH
46
OAM AGENT
34
PLCE
32
CE
CE
CE
CE
42-1
42-N
44-1
44-M

FIG. 3

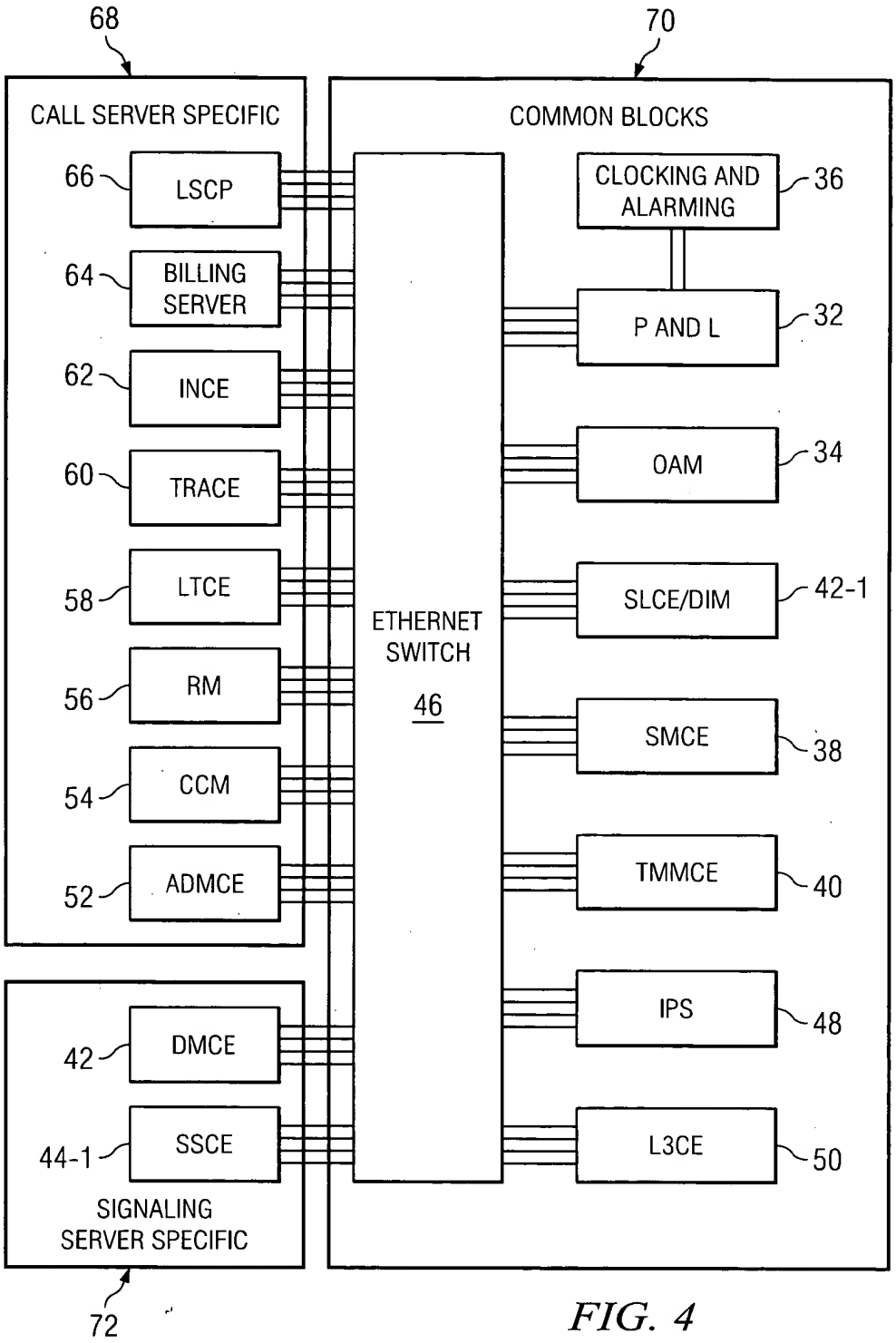

68
70
CALL SERVER SPECIFIC
COMMON BLOCKS
66
LSCP
64
BILLING SERVER
62
INCE
60
TRACE
58
LTCE
56
RM
54
CCM
52
ADMCE
ETHERNET SWITCH
46
CLOCKING AND ALARMING
36
P AND L
32
OAM
34
SLCE/DIM
42-1
SMCE
38
TMMCE
40
IPS
48
L3CE
50
42
DMCE
44-1
SSCE
SIGNALING SERVER SPECIFIC
72

FIG. 4

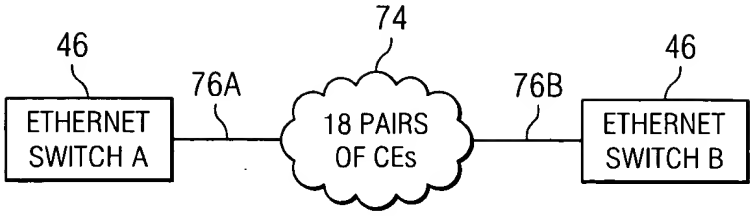

74
46
46
76A
76B
ETHERNET SWITCH A
18 PAIRS OF CEs
ETHERNET SWITCH B

FIG. 5A

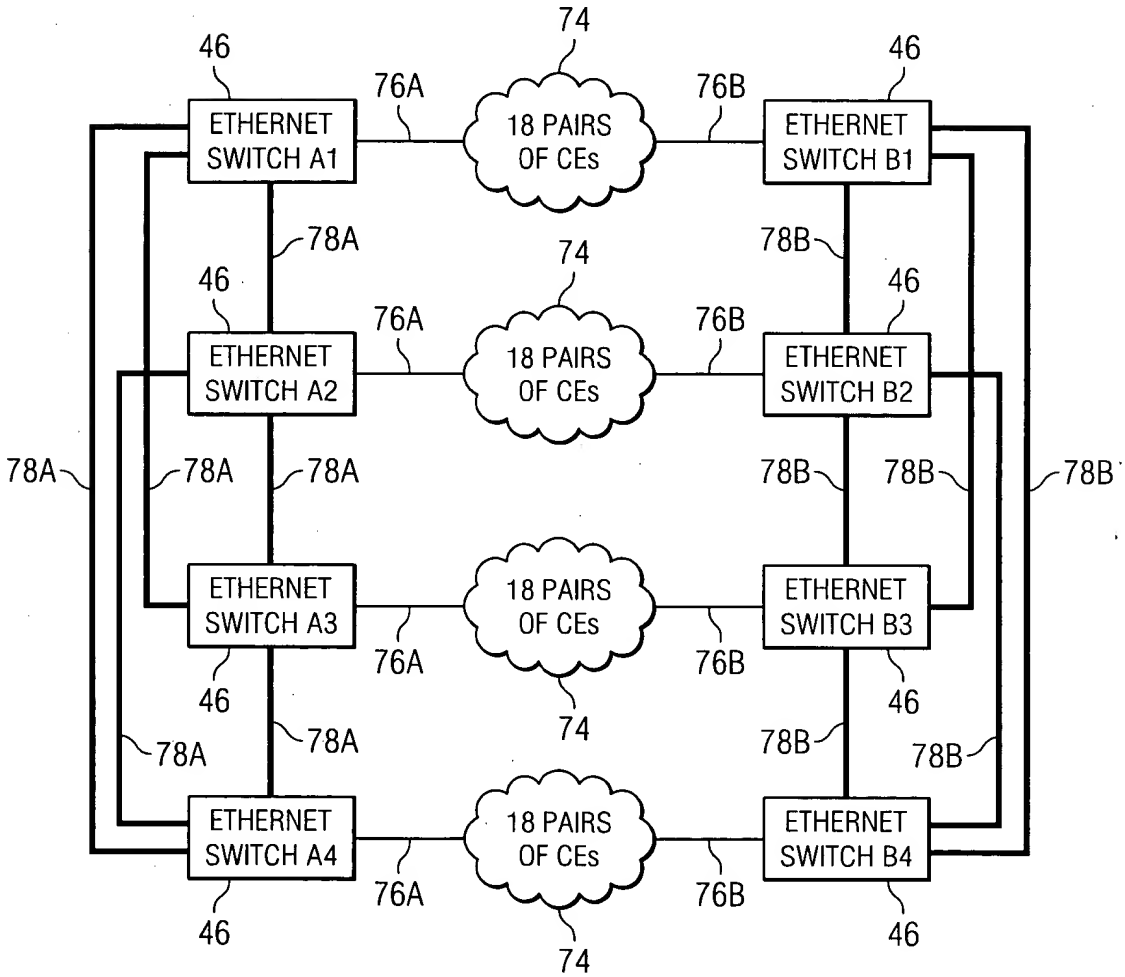

74
46
46
76A
76B
ETHERNET SWITCH A1
18 PAIRS OF CEs
ETHERNET SWITCH B1
78A
78B
74
46
46
76A
76B
ETHERNET SWITCH A2
18 PAIRS OF CEs
ETHERNET SWITCH B2
78A
78A
78A
78B
78B
78B
ETHERNET SWITCH A3
18 PAIRS OF CEs
ETHERNET SWITCH B3
76A
76B
46
74
46
78A
78A
78B
78B
ETHERNET SWITCH A4
18 PAIRS OF CEs
ETHERNET SWITCH B4
76A
76B
46
74
46

FIG. 5B

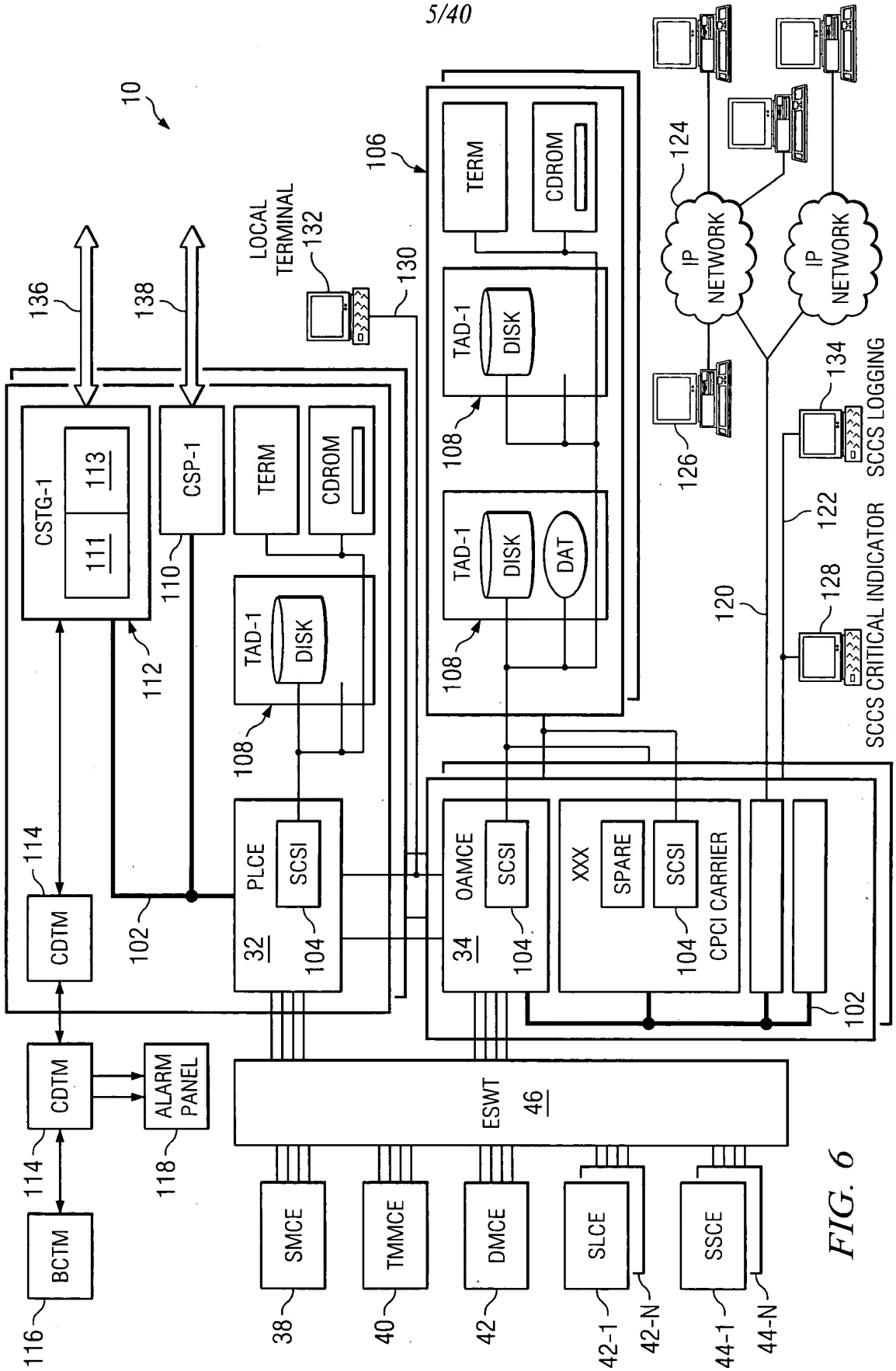

10
136
138
LOCAL TERMINAL
132
130
106
TERM
CDROM
TAD-1
DISK
108
124
IP NETWORK
IP NETWORK
126
134
SCCS LOGGING
SCCS CRITICAL INDICATOR
122
120
128
CSTG-1
111
113
CSP-1
110
112
TERM
CDROM
TAD-1
DISK
108
TAD-1
DISK
DAT
108
114
CDTM
102
PLCE
32
SCSI
104
OAMCE
34
SCSI
104
XXX
SPARE
SCSI
104
CPCI CARRIER
102
CDTM
ALARM PANEL
114
118
ESWT
46
BCTM
116
SMCE
38
TMMCE
40
DMCE
42
SLCE
42-1
42-N
SSCE
44-1
44-N

FIG. 6

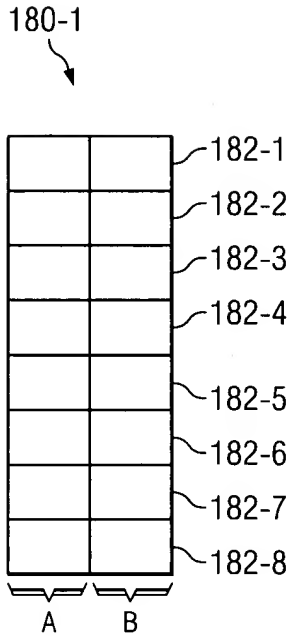


FIG. 7

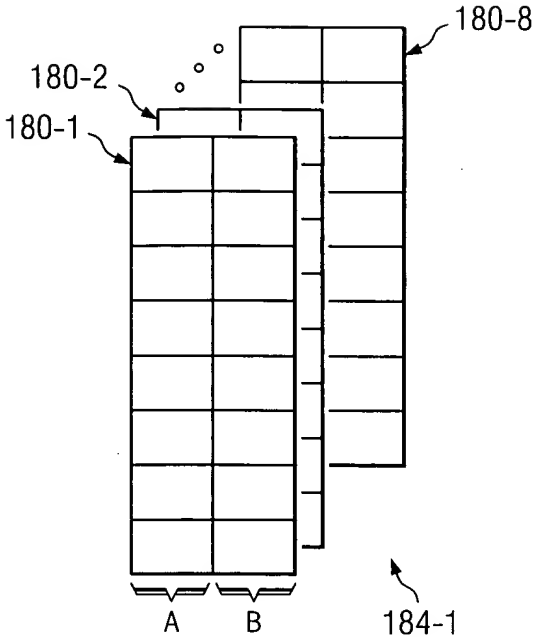


FIG. 8

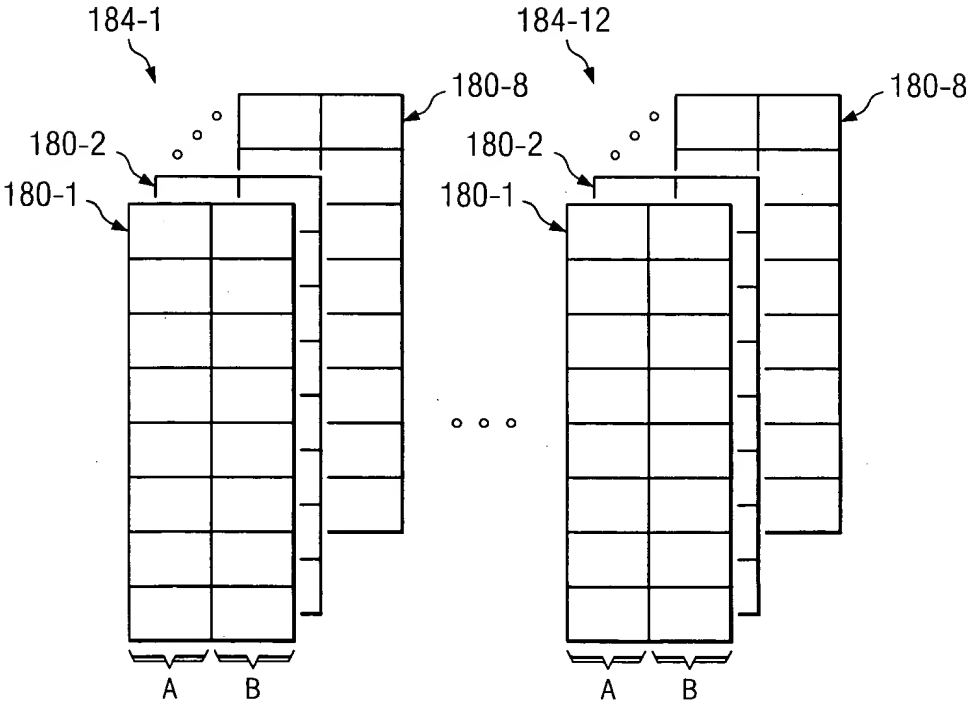


FIG. 9

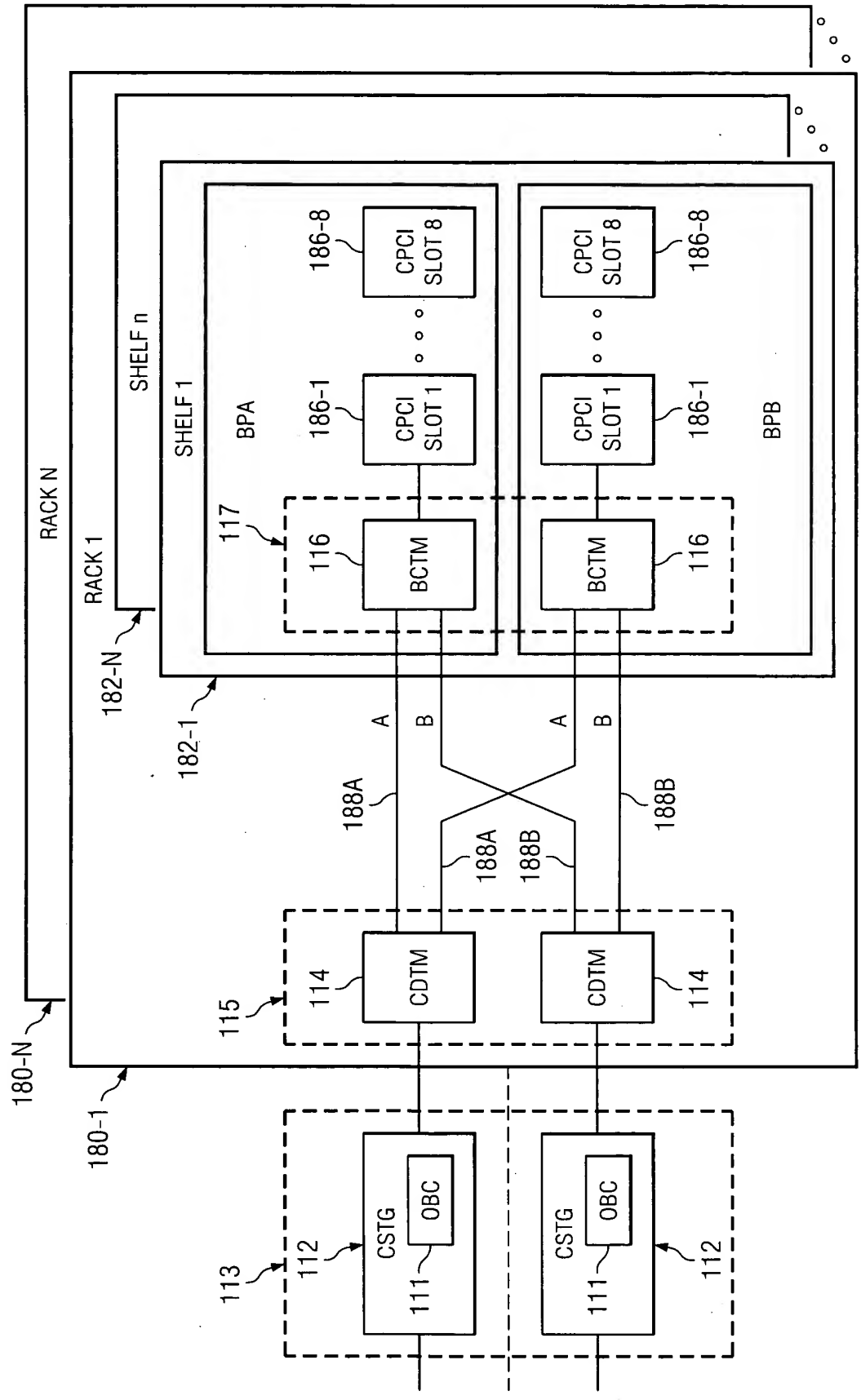

RACK N
RACK 1
SHELF n
SHELF 1
BPA
BPB
CPCI SLOT 8
CPCI SLOT 1
186-8
186-1
BCTM
CDTM
CSTG
OBC
116
117
114
115
111
112
113
188A
188B
A
B
180-N
180-1
182-N
182-1

FIG. 10A

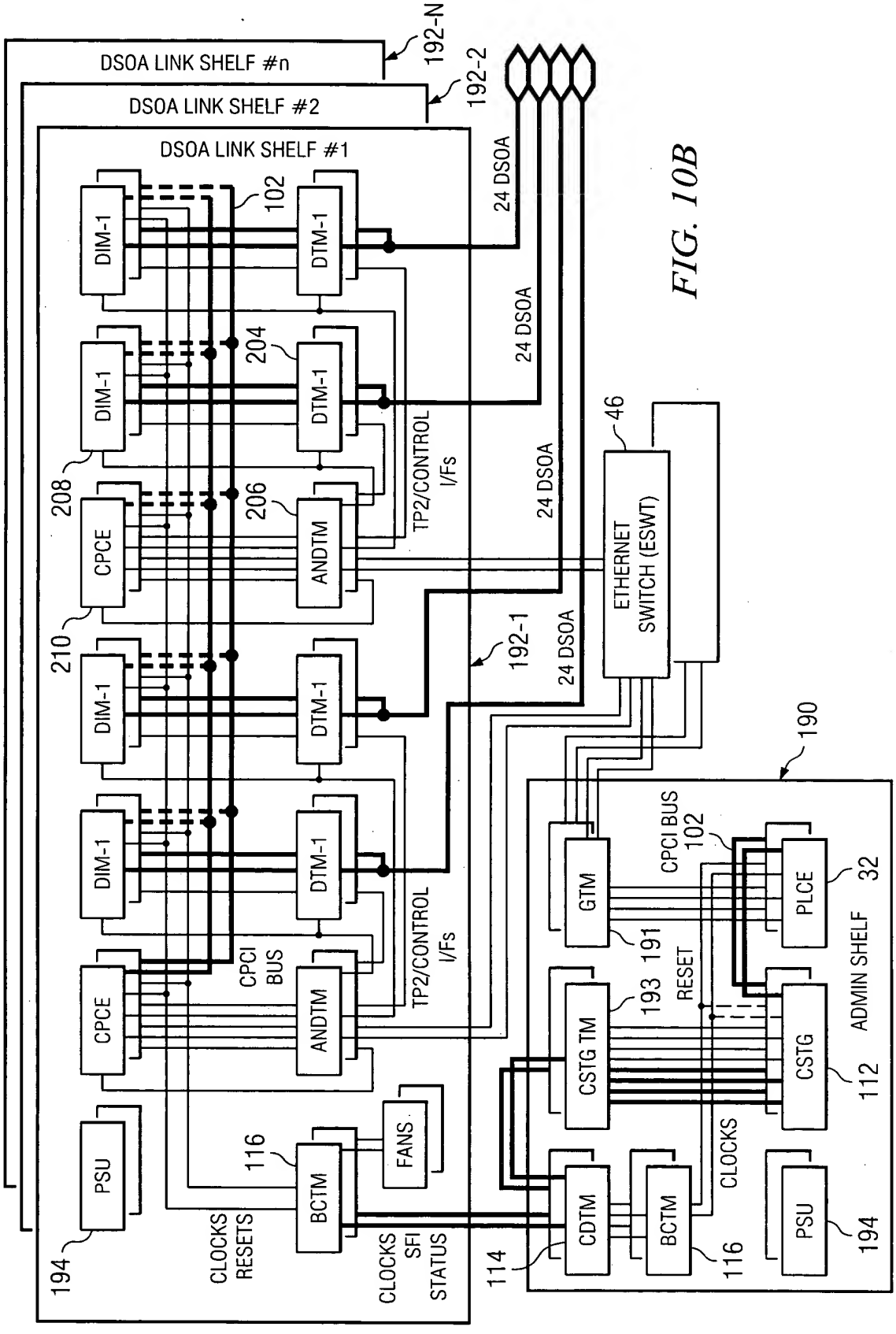
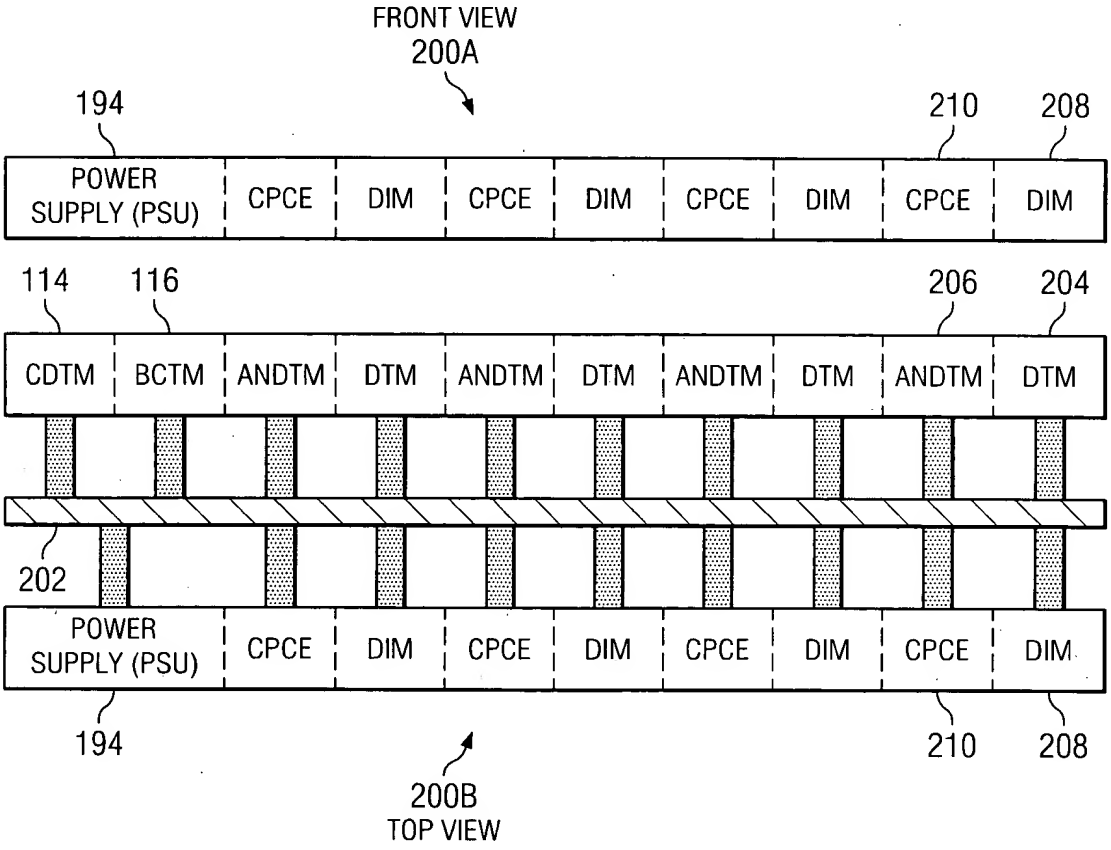

DSOA LINK SHELF #n
DSOA LINK SHELF #2
DSOA LINK SHELF #1
192-N
192-2
192-1
24 DSOA
24 DSOA
24 DSOA
24 DSOA
102
204
206
208
210
DIM-1
DTM-1
CPCE
ANDTM
TP2/CONTROL I/Fs
CPCI BUS
ETHERNET SWITCH (ESWT)
46
190
GTM
CPCI BUS 102
PLCE
32
ADMIN SHELF
CSTG TM
193
191
RESET
CSTG
112
CDTM
BCTM
116
114
CLOCKS
PSU
194
FANS
CLOCKS
RESETS
CLOCKS
SFI
STATUS

FIG. 10B

FIG. 10C


FRONT VIEW
200A
194
210
208
POWER SUPPLY (PSU)
CPCE
DIM
CPCE
DIM
CPCE
DIM
CPCE
DIM
114
116
206
204
CDTM
BCTM
ANDTM
DTM
ANDTM
DTM
ANDTM
DTM
ANDTM
DTM
202
POWER SUPPLY (PSU)
CPCE
DIM
CPCE
DIM
CPCE
DIM
CPCE
DIM
194
210
208
200B
TOP VIEW

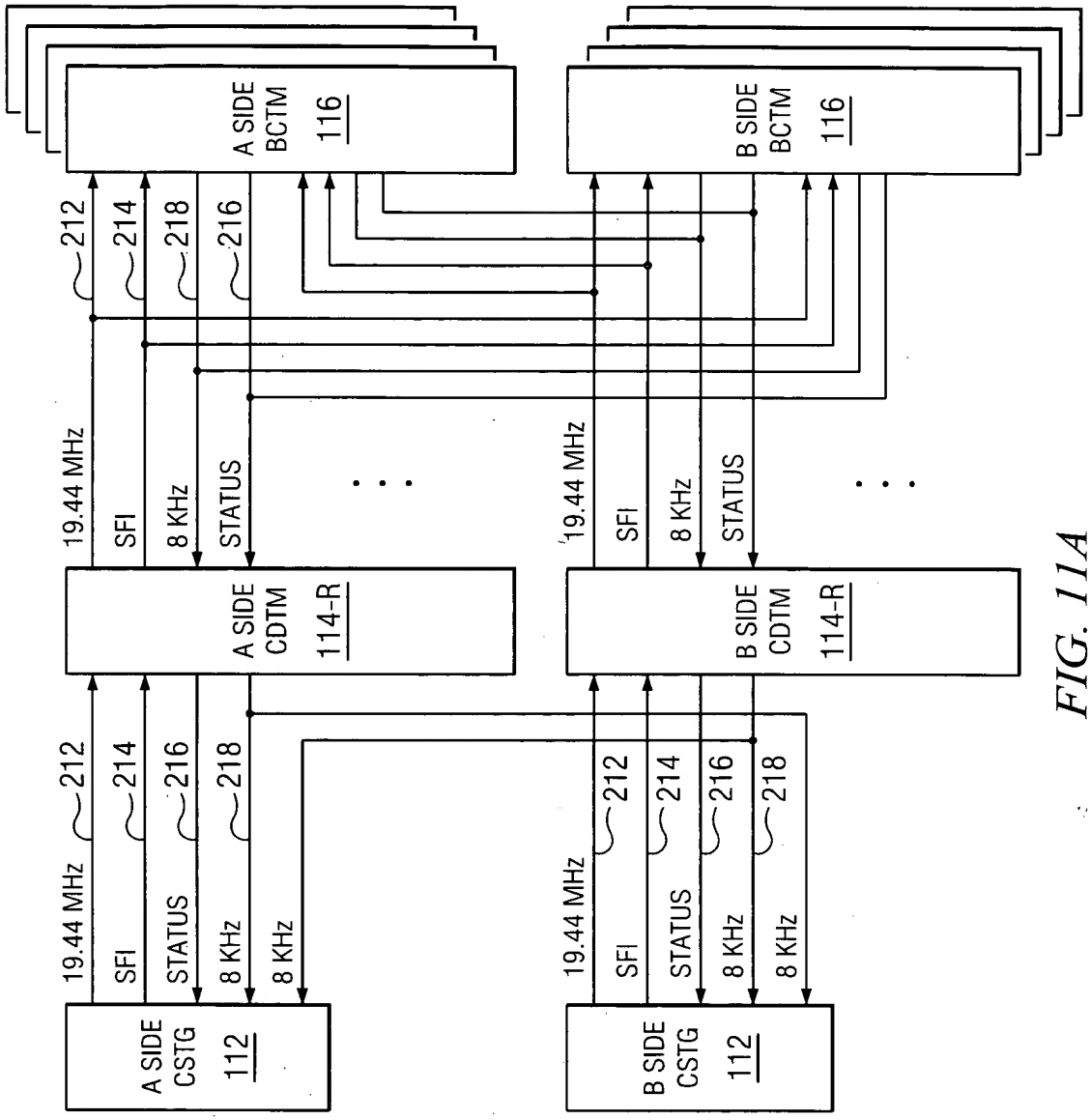

A SIDE BCTM 116
B SIDE BCTM 116
212
214
218
216
19.44 MHz
SFI
8 KHz
STATUS
A SIDE CDTM 114-R
B SIDE CDTM 114-R
A SIDE CSTG 112
B SIDE CSTG 112

FIG. 11A

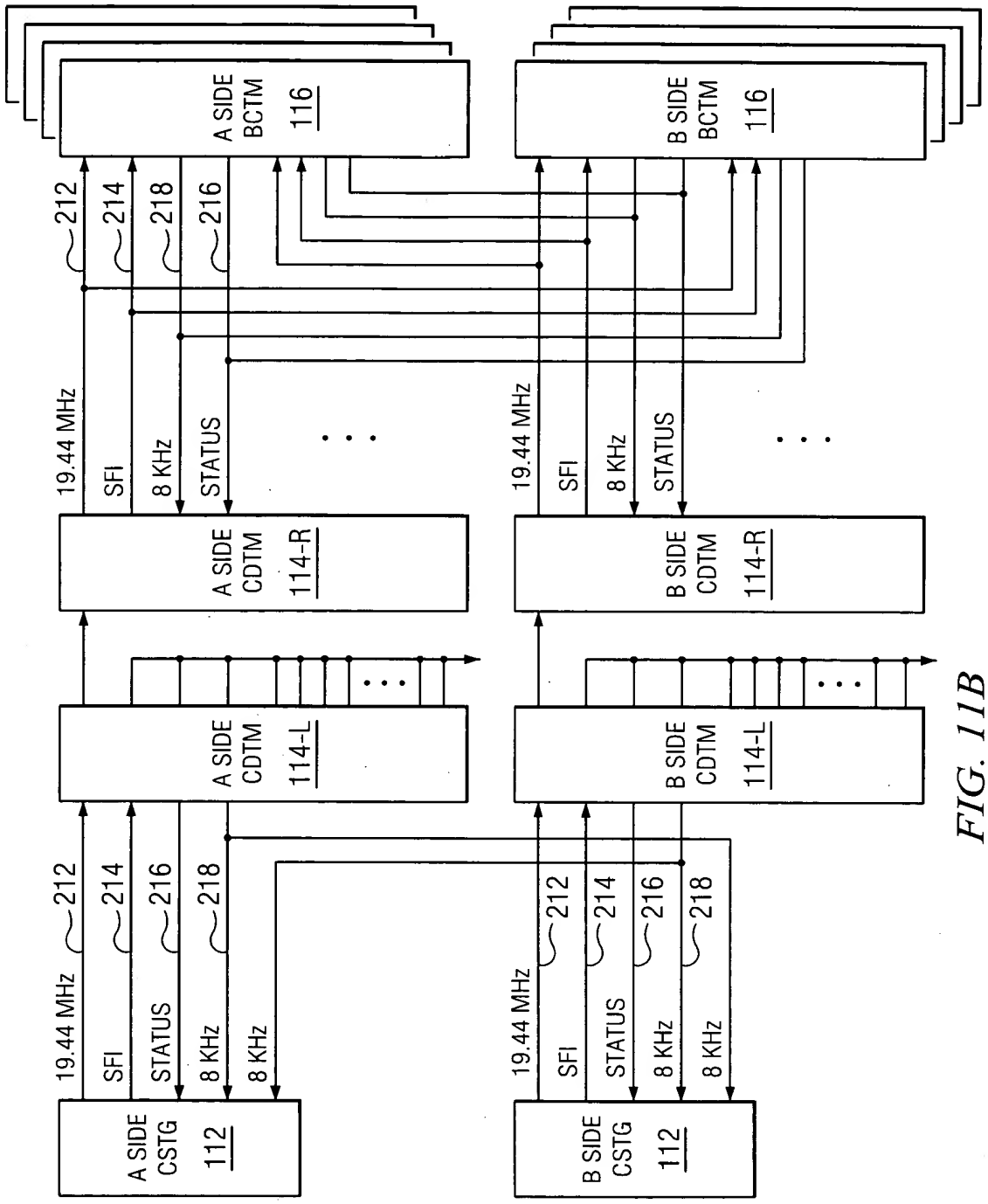

A SIDE BCTM 116
B SIDE BCTM 116
212
214
218
216
19.44 MHz
SFI
8 KHz
STATUS
A SIDE CDTM 114-R
B SIDE CDTM 114-R
A SIDE CDTM 114-L
B SIDE CDTM 114-L
A SIDE CSTG 112
B SIDE CSTG 112

FIG. 11B

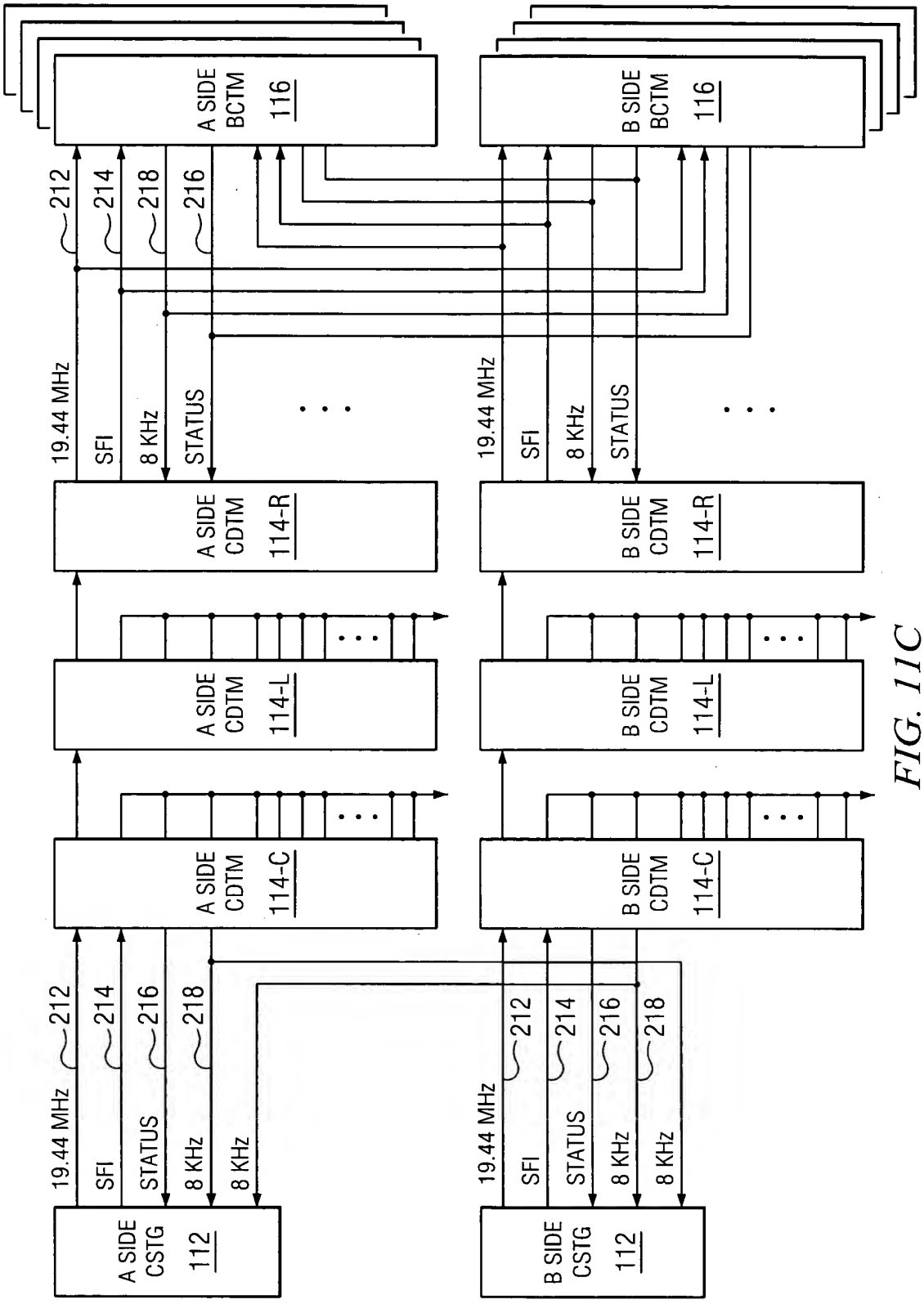

A SIDE BCTM 116
B SIDE BCTM 116
212
214
218
216
19.44 MHz
SFI
8 KHz
STATUS
A SIDE CDTM 114-R
B SIDE CDTM 114-R
A SIDE CDTM 114-L
B SIDE CDTM 114-L
A SIDE CDTM 114-C
B SIDE CDTM 114-C
A SIDE CSTG 112
B SIDE CSTG 112

FIG. 11C

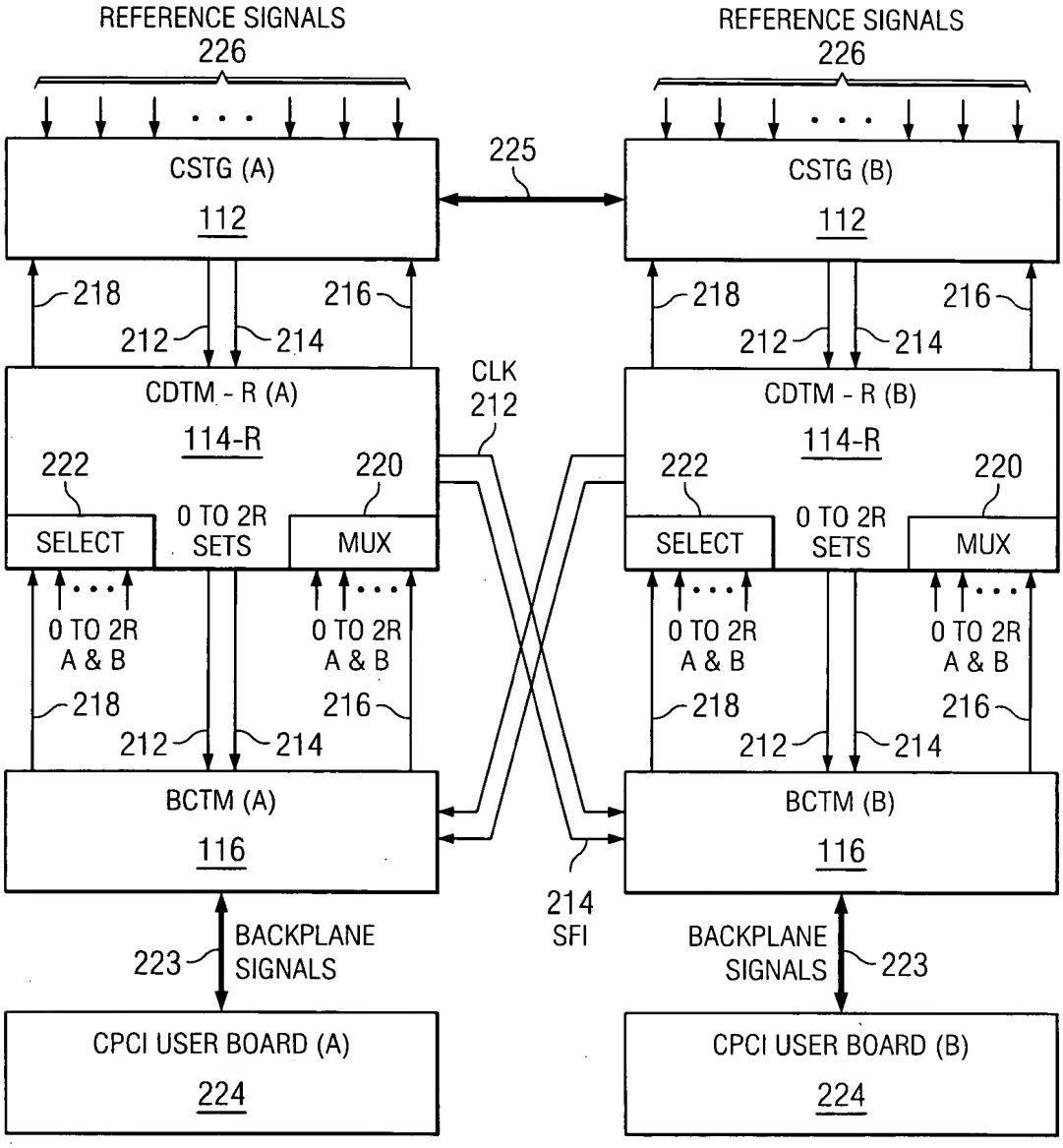

REFERENCE SIGNALS
226
REFERENCE SIGNALS
226
225
CSTG (A)
112
CSTG (B)
112
218
216
212
214
218
216
212
214
CLK
212
CDTM - R (A)
114-R
CDTM - R (B)
114-R
222
220
222
220
SELECT
0 TO 2R
SETS
MUX
SELECT
0 TO 2R
SETS
MUX
0 TO 2R
A & B
0 TO 2R
A & B
0 TO 2R
A & B
0 TO 2R
A & B
218
216
212
214
218
216
212
214
BCTM (A)
116
BCTM (B)
116
214
SFI
223
BACKPLANE
SIGNALS
BACKPLANE
SIGNALS
223
CPCI USER BOARD (A)
224
CPCI USER BOARD (B)
224

FIG. 12A

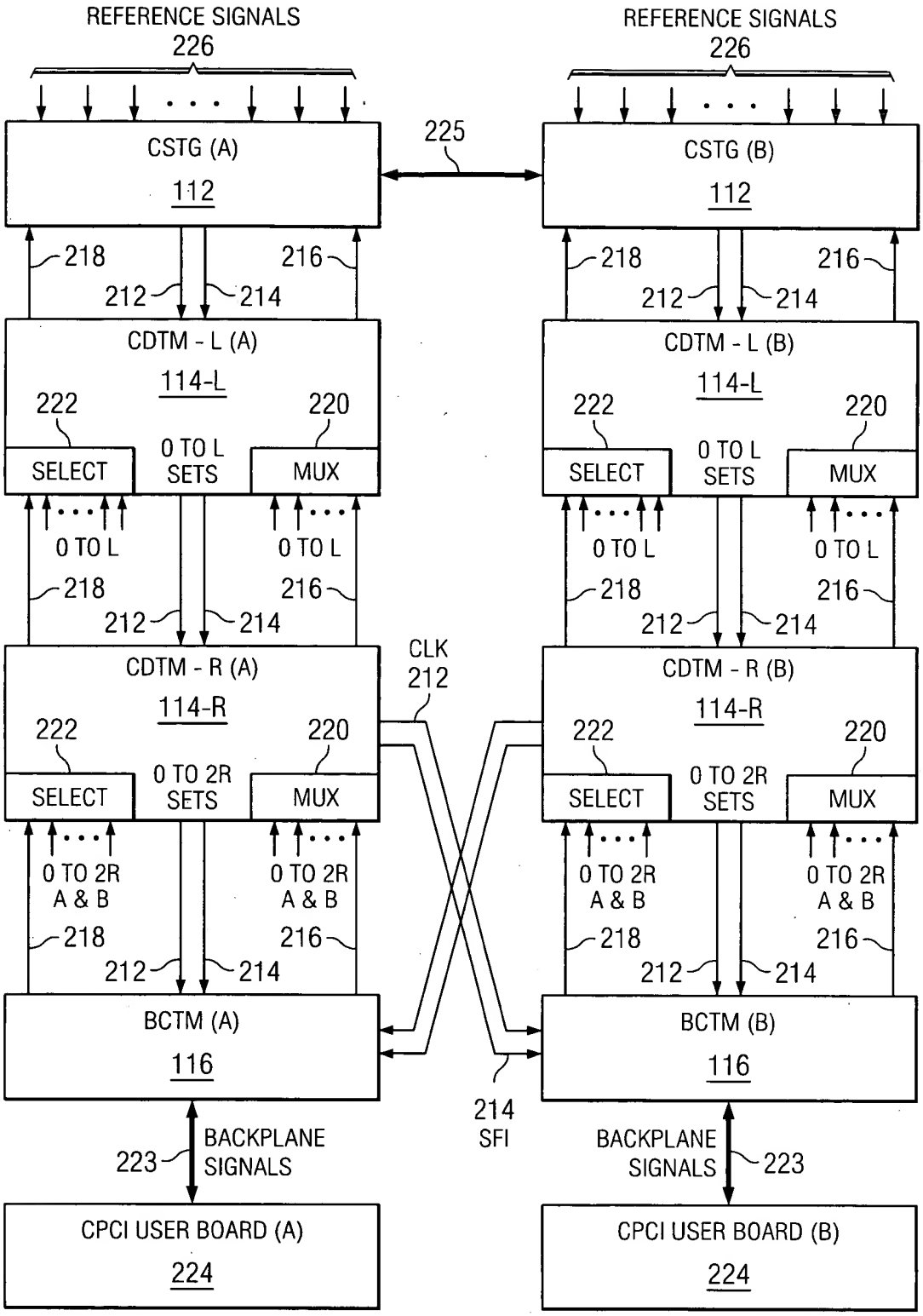

REFERENCE SIGNALS
226
REFERENCE SIGNALS
226
225
CSTG (A)
112
CSTG (B)
112
218
216
212
214
CDTM - L (A)
114-L
CDTM - L (B)
114-L
222
220
SELECT
0 TO L SETS
MUX
0 TO L
CLK
212
CDTM - R (A)
114-R
CDTM - R (B)
114-R
0 TO 2R SETS
0 TO 2R A & B
BCTM (A)
116
BCTM (B)
116
214
SFI
223
BACKPLANE SIGNALS
CPCI USER BOARD (A)
224
CPCI USER BOARD (B)
224

FIG. 12B

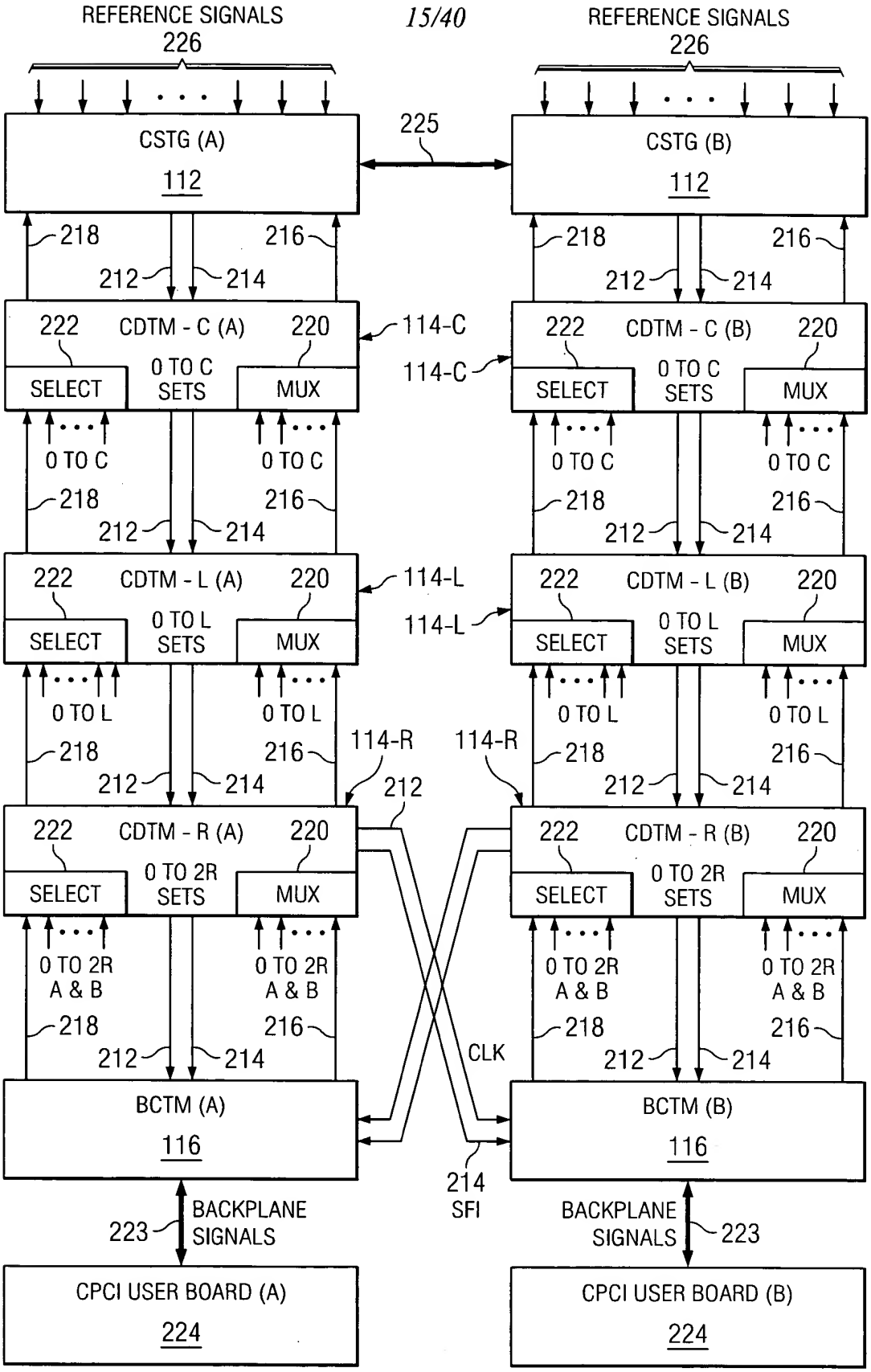

REFERENCE SIGNALS
226
REFERENCE SIGNALS
226
225
CSTG (A)
112
CSTG (B)
112
218
216
212
214
222
CDTM - C (A)
220
114-C
SELECT
0 TO C SETS
MUX
0 TO C
CDTM - C (B)
CDTM - L (A)
114-L
0 TO L SETS
CDTM - L (B)
114-R
CDTM - R (A)
0 TO 2R SETS
CDTM - R (B)
0 TO 2R A & B
CLK
BCTM (A)
116
BCTM (B)
214
SFI
223
BACKPLANE SIGNALS
CPCI USER BOARD (A)
224
CPCI USER BOARD (B)

FIG. 12C

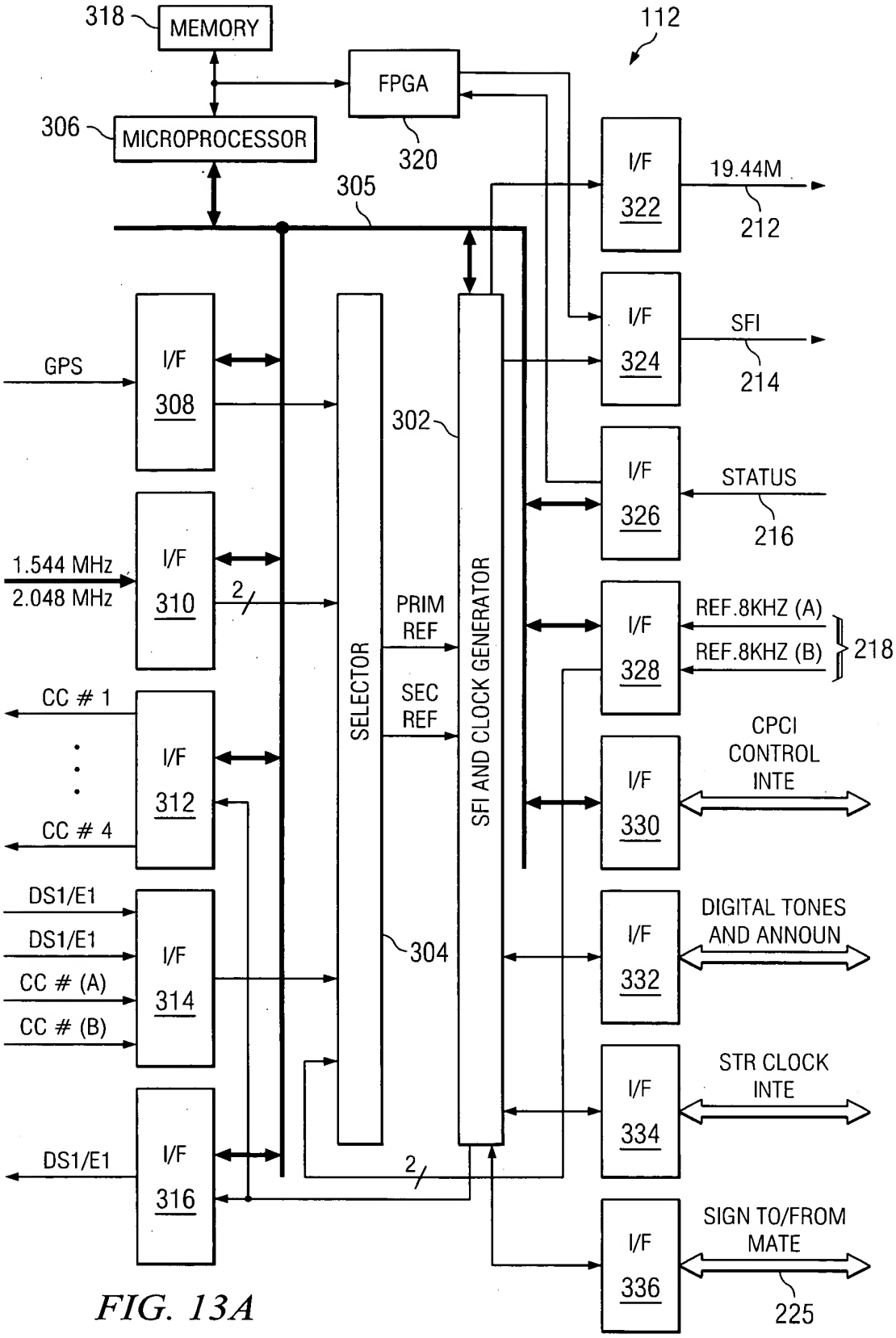

318
MEMORY
112
FPGA
306
MICROPROCESSOR
320
305
I/F
322
19.44M
212
I/F
324
SFI
214
GPS
I/F
308
302
I/F
326
STATUS
216
1.544 MHz
2.048 MHz
I/F
310
2
PRIM
REF
I/F
328
REF.8KHZ (A)
REF.8KHZ (B)
218
CC # 1
CC # 4
I/F
312
SELECTOR
SEC
REF
SFI AND CLOCK GENERATOR
I/F
330
CPCI
CONTROL
INTE
DS1/E1
DS1/E1
CC # (A)
CC # (B)
I/F
314
304
I/F
332
DIGITAL TONES
AND ANNOUN
DS1/E1
I/F
316
2
I/F
334
STR CLOCK
INTE
I/F
336
SIGN TO/FROM
MATE
225

FIG. 13A

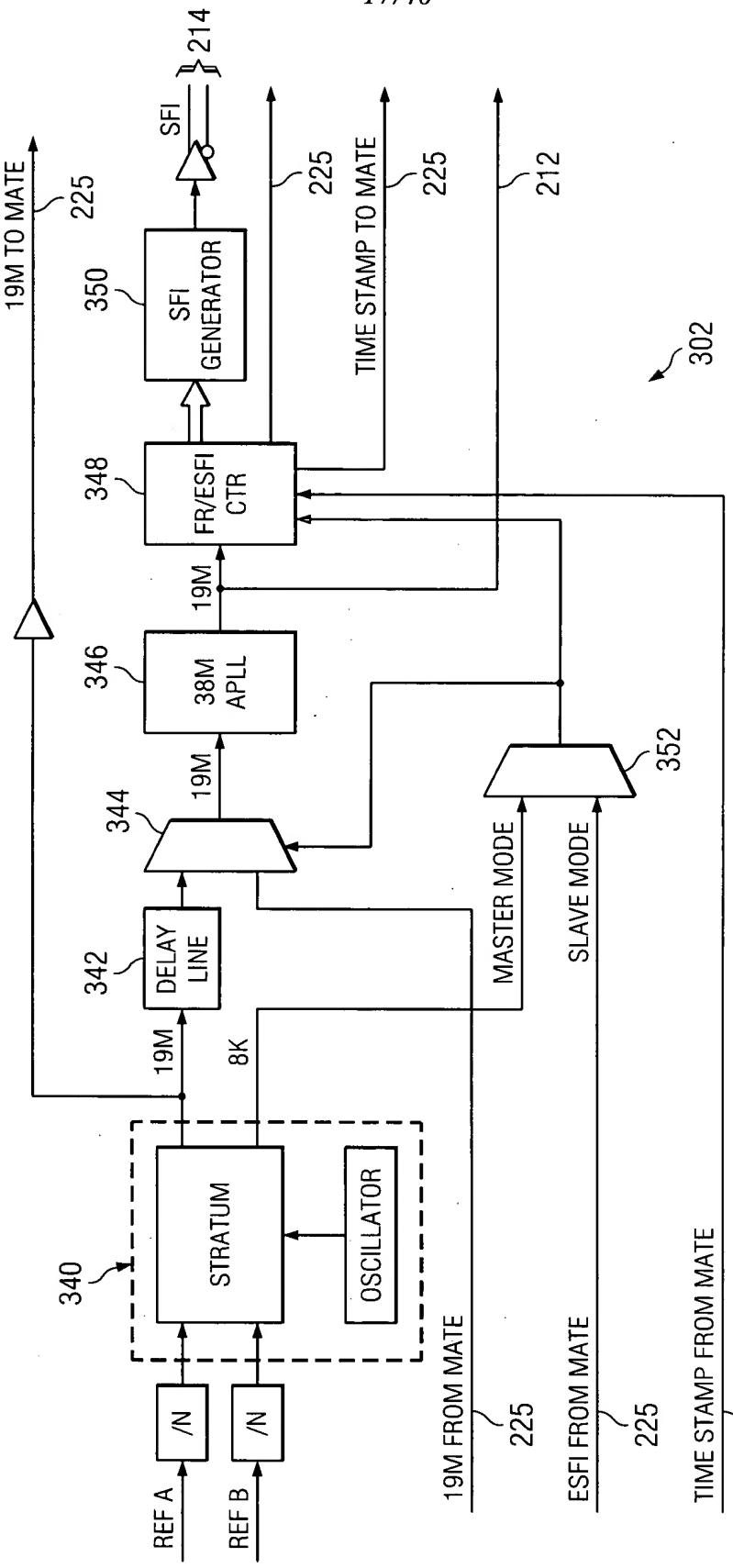

REF A
REF B
/N
/N
340
STRATUM
OSCILLATOR
19M
8K
342
DELAY LINE
344
19M
346
38M APLL
19M
348
FR/ESFI CTR
350
SFI GENERATOR
SFI
214
19M TO MATE
225
225
TIME STAMP TO MATE
225
212
302
352
MASTER MODE
SLAVE MODE
19M FROM MATE
225
ESFI FROM MATE
225
TIME STAMP FROM MATE
225

FIG. 13B

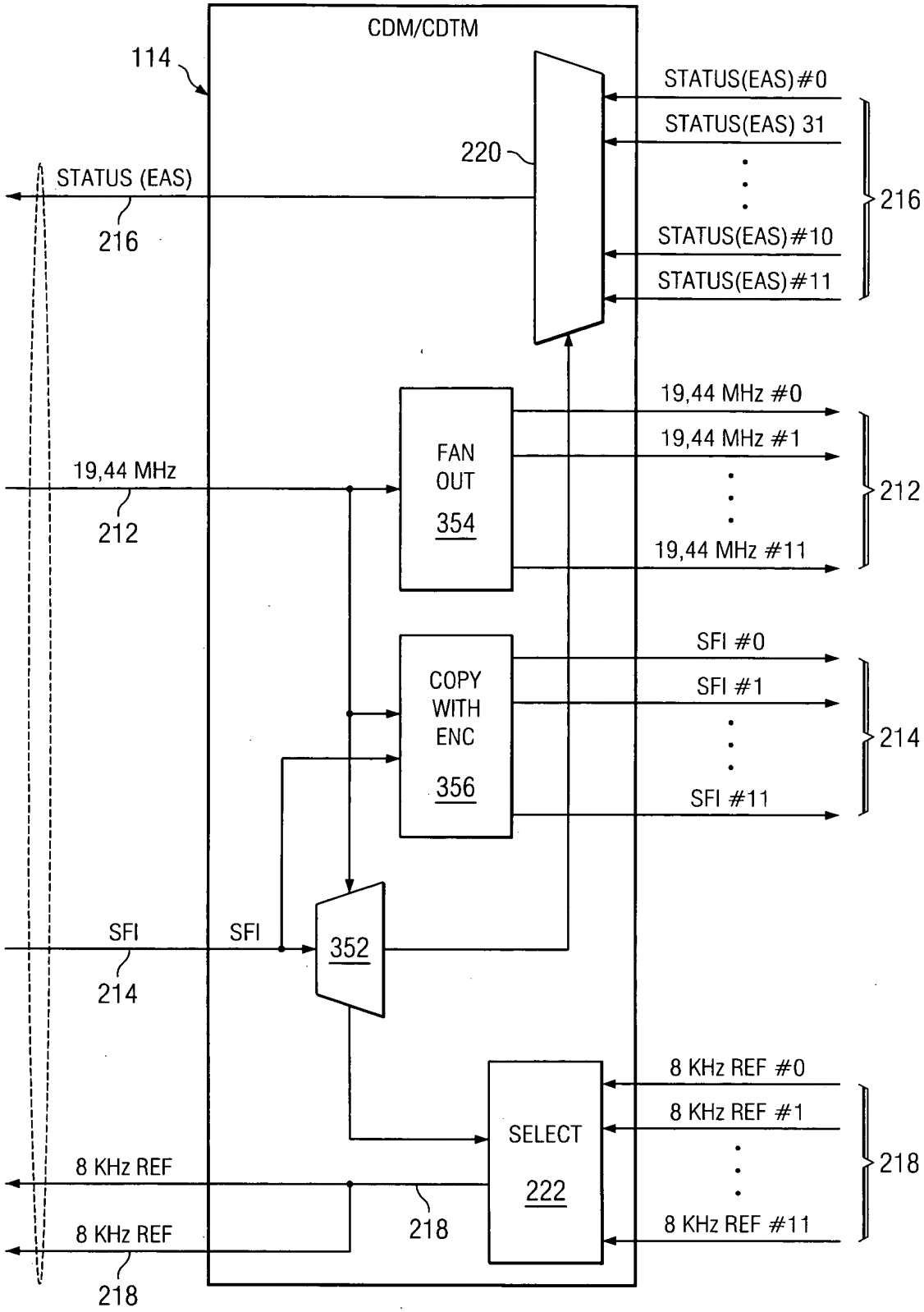
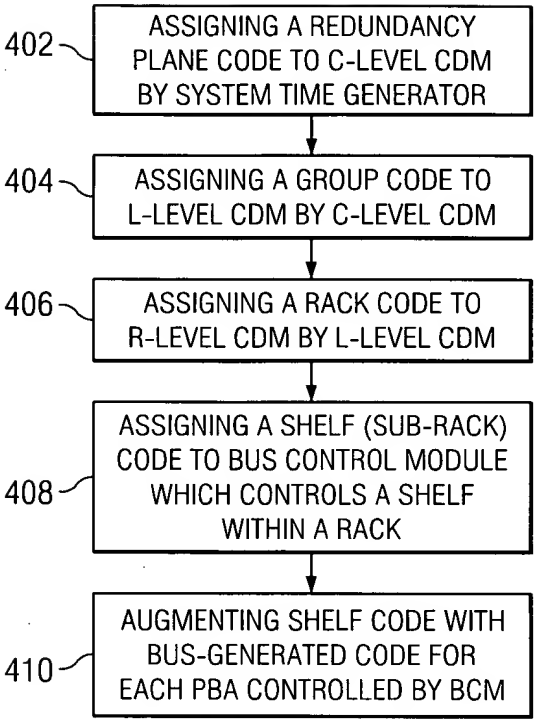

CDM/CDTM
114
220
STATUS(EAS)#0
STATUS(EAS) 31
STATUS(EAS)#10
STATUS(EAS)#11
216
STATUS (EAS)
216
19,44 MHz #0
19,44 MHz #1
19,44 MHz #11
212
19,44 MHz
212
FAN OUT
354
SFI #0
SFI #1
SFI #11
214
COPY WITH ENC
356
SFI
SFI
214
352
8 KHz REF #0
8 KHz REF #1
8 KHz REF #11
218
SELECT
222
8 KHz REF
218
8 KHz REF
218

FIG. 14

FIG. 15


402
ASSIGNING A REDUNDANCY PLANE CODE TO C-LEVEL CDM BY SYSTEM TIME GENERATOR
404
ASSIGNING A GROUP CODE TO L-LEVEL CDM BY C-LEVEL CDM
406
ASSIGNING A RACK CODE TO R-LEVEL CDM BY L-LEVEL CDM
408
ASSIGNING A SHELF (SUB-RACK) CODE TO BUS CONTROL MODULE WHICH CONTROLS A SHELF WITHIN A RACK
410
AUGMENTING SHELF CODE WITH BUS-GENERATED CODE FOR EACH PBA CONTROLLED BY BCM

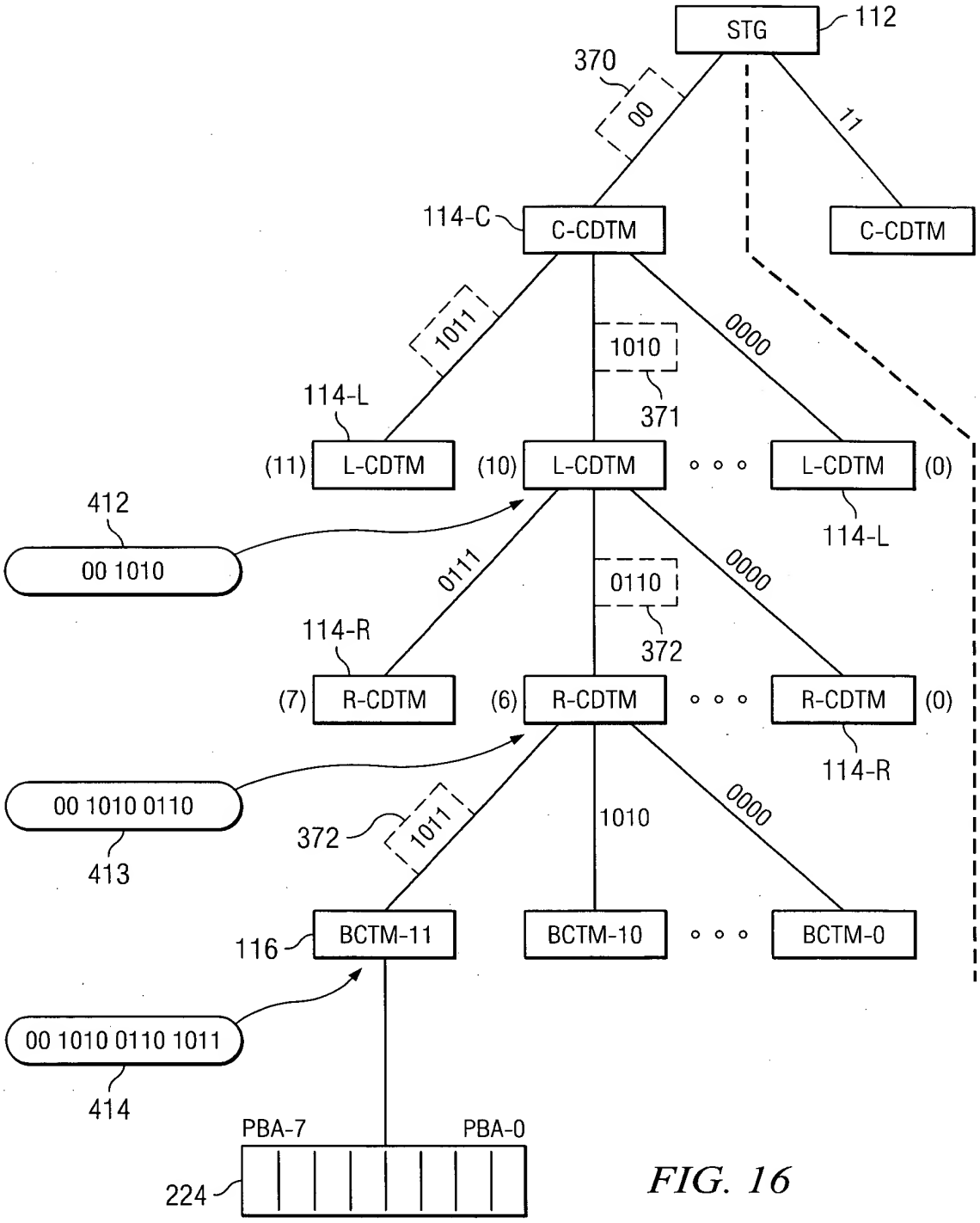

STG
112
370
00
11
114-C
C-CDTM
C-CDTM
1011
1010
0000
114-L
371
(11)
L-CDTM
(10)
L-CDTM
L-CDTM
(0)
412
00 1010
0111
0110
0000
114-R
372
(7)
R-CDTM
(6)
R-CDTM
R-CDTM
(0)
114-R
00 1010 0110
372
1011
1010
0000
413
116
BCTM-11
BCTM-10
BCTM-0
00 1010 0110 1011
414
PBA-7
PBA-0
224

FIG. 16

FIG. 17A

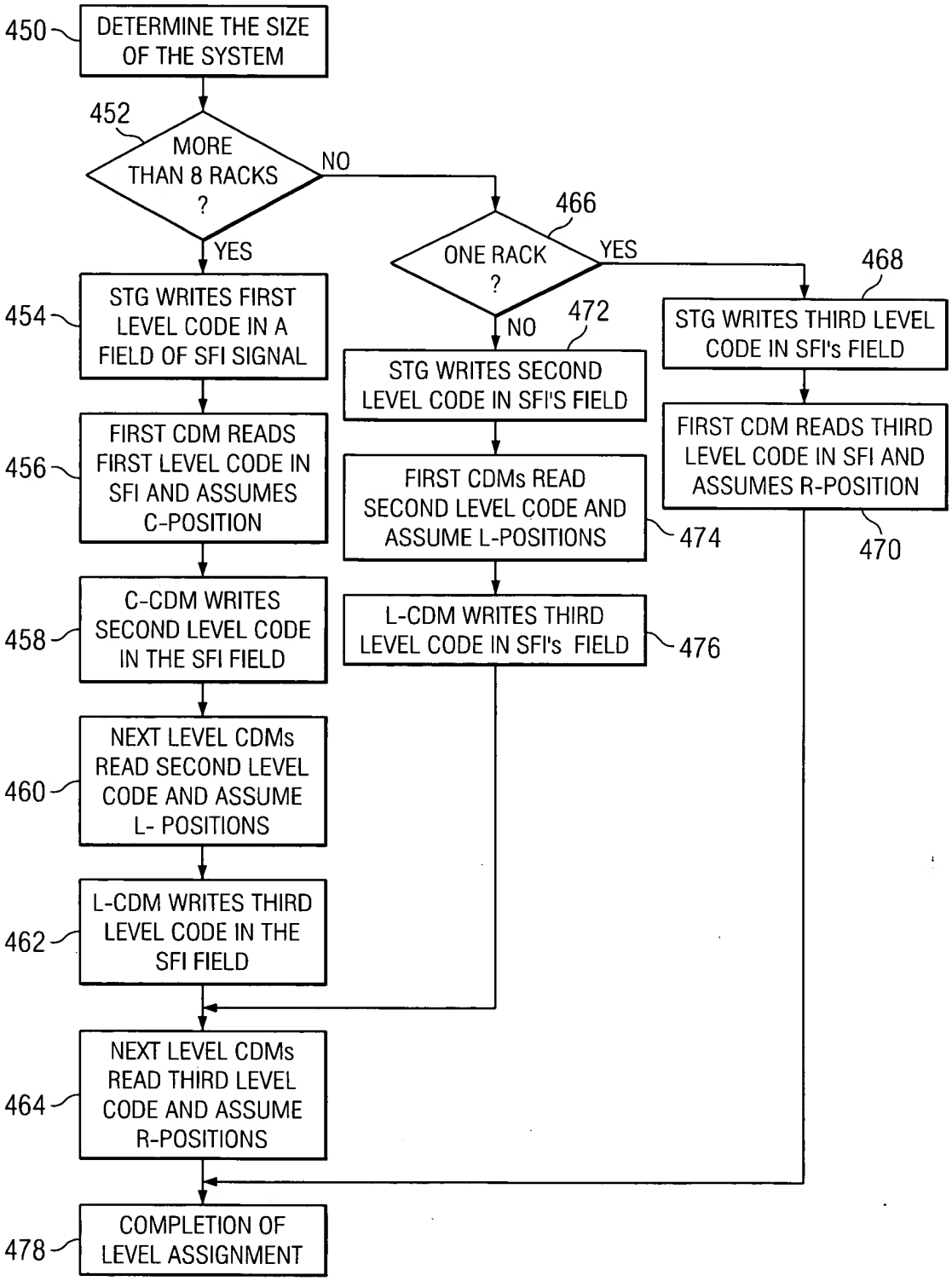

450
DETERMINE THE SIZE OF THE SYSTEM
452
MORE THAN 8 RACKS ?
NO
YES
454
STG WRITES FIRST LEVEL CODE IN A FIELD OF SFI SIGNAL
456
FIRST CDM READS FIRST LEVEL CODE IN SFI AND ASSUMES C-POSITION
458
C-CDM WRITES SECOND LEVEL CODE IN THE SFI FIELD
460
NEXT LEVEL CDMs READ SECOND LEVEL CODE AND ASSUME L- POSITIONS
462
L-CDM WRITES THIRD LEVEL CODE IN THE SFI FIELD
464
NEXT LEVEL CDMs READ THIRD LEVEL CODE AND ASSUME R-POSITIONS
478
COMPLETION OF LEVEL ASSIGNMENT
466
ONE RACK ?
YES
NO
468
STG WRITES THIRD LEVEL CODE IN SFI's FIELD
FIRST CDM READS THIRD LEVEL CODE IN SFI AND ASSUMES R-POSITION
470
472
STG WRITES SECOND LEVEL CODE IN SFI'S FIELD
FIRST CDMs READ SECOND LEVEL CODE AND ASSUME L-POSITIONS
474
L-CDM WRITES THIRD LEVEL CODE IN SFI's FIELD
476

FIG. 17B

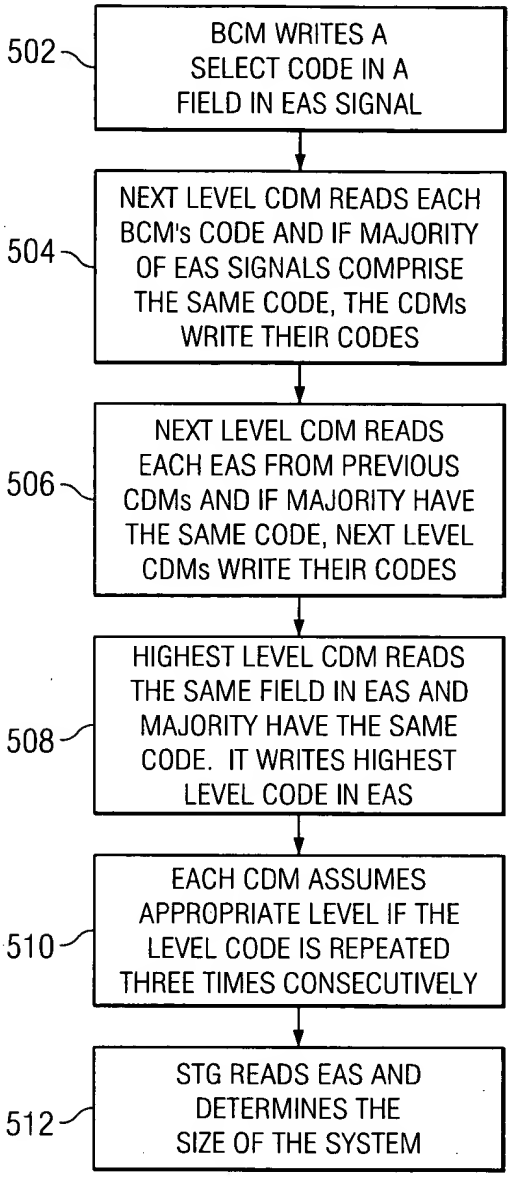


FIG. 18

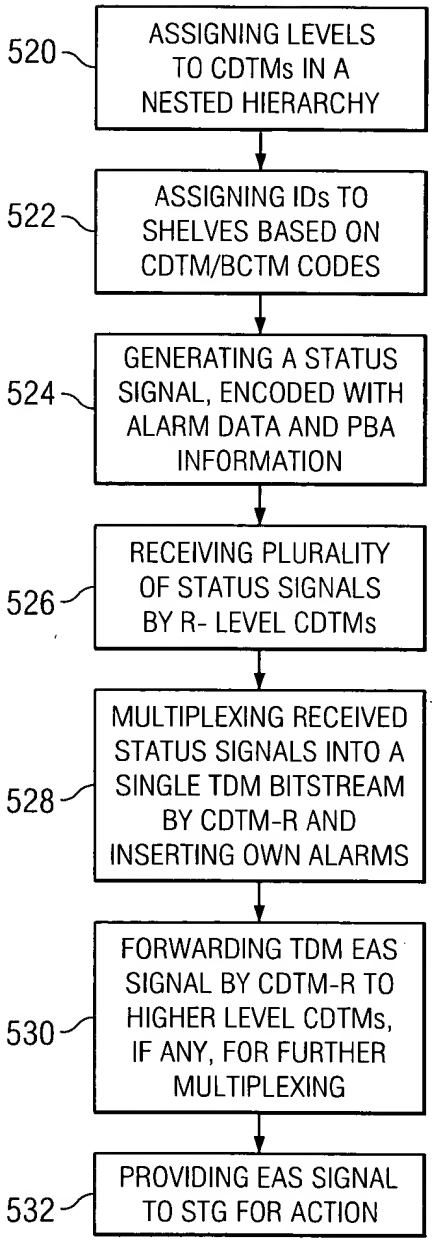


FIG. 19A

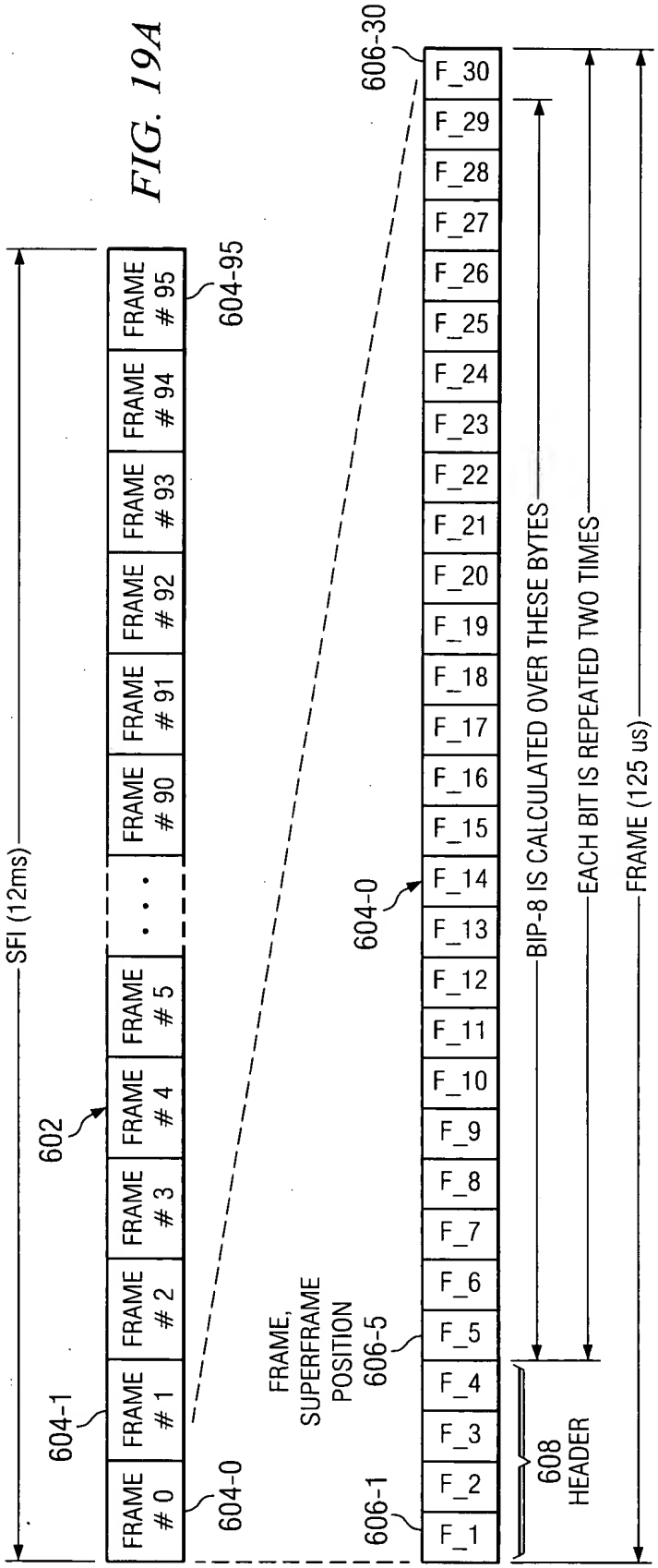
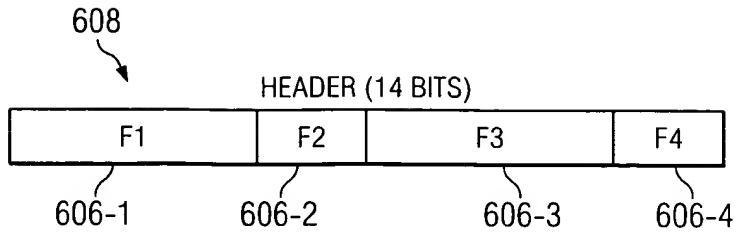
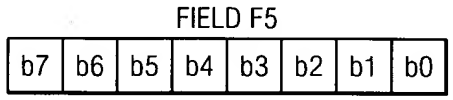

SFI (12ms)
602
604-1
604-0
604-95
606-30
606-1
606-5
604-0
FRAME, SUPERFRAME POSITION
FRAME # 0
FRAME # 1
FRAME # 2
FRAME # 3
FRAME # 4
FRAME # 5
FRAME # 90
FRAME # 91
FRAME # 92
FRAME # 93
FRAME # 94
FRAME # 95
F_1
F_2
F_3
F_4
F_5
F_6
F_7
F_8
F_9
F_10
F_11
F_12
F_13
F_14
F_15
F_16
F_17
F_18
F_19
F_20
F_21
F_22
F_23
F_24
F_25
F_26
F_27
F_28
F_29
F_30
608 HEADER
BIP-8 IS CALCULATED OVER THESE BYTES
EACH BIT IS REPEATED TWO TIMES
FRAME (125 us)

FIG. 19B

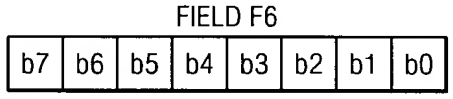


F1: 6 BITS FOR SYNCHRONIZATION (010101)
F2: 2 BITS FOR TIME STAMP (11 EVERY 68th SFIs, 00 IN THE REST)
F3: RESERVED
F4: 2 BITS FOR PLANE ID (00 FOR PLANE "A" AND 11 FOR PLANE "B")

FIG. 19C



b7 TO b0 = BITS ASSIGNED FOR FRAME COUNT (0 TO 95)



b7 TO b5 = BITS ALLOCATED FOR SFI COUNT (0 TO 7)
b4 = BIT ASSIGNED FOR SFI "O.K." (1 FOR O.K.)
b3 = BIT ASSIGNED FOR CLOCK "O.K." (1 FOR O.K.)
b2 TO b0 = RESERVED

FIG. 19D

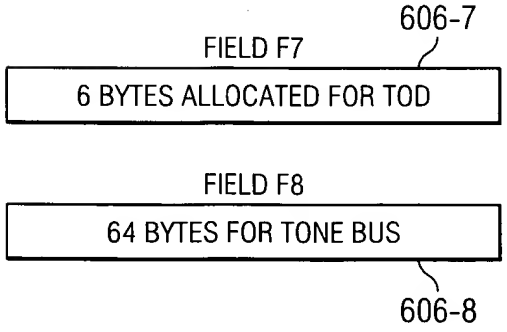
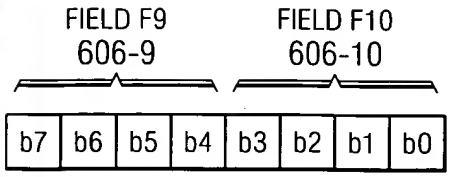
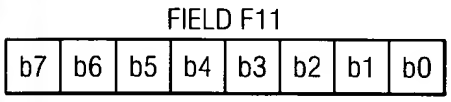


FIG. 19E

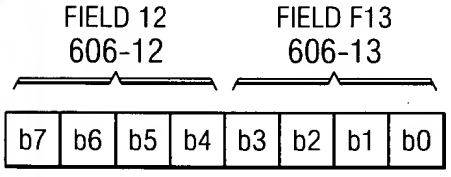


b7 TO b4: MSN FOR SHELF ID; IT IS INSERTED BY CDTM HIGHEST LEVEL
EACH PORT IS ASSIGNED A VALUE FROM 0000 TO 1011
b3 TO b0: SECOND NIBBLE OF THE SHELF ID INSERTED BY CDTM INTERMEDIATE
EACH PORT IS ASSIGNED A VALUE FROM 0000 TO 0111

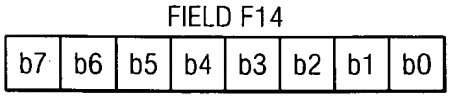


b7 TO b4: LSN FOR SHELF ID INSERTED BY CDTM LOWEST LEVEL
EACH PORT IS ASSIGNED A VALUE FROM 0000 TO 1011
b3 TO b0: RESERVED

FIG. 19F



b7 TO b4: MSN FOR SHELF ID; IT IS INSERTED BY CDTM HIGHEST LEVEL
EACH PORT IS ASSIGNED A VALUE FROM 0000 TO 1011
b3 TO b0: SECOND NIBBLE OF THE SHELF ID INSERTED BY CDTM INTERMEDIATE
EACH PORT IS ASSIGNED A VALUE FROM 0000 TO 0111



b7 TO b4: LSN FOR SHELF ID INSERTED BY CDTM LOWEST LEVEL
EACH PORT IS ASSIGNED A VALUE FROM 0000 TO 1011
b3 TO b0: RESERVED

FIG. 19G

FIELD #15 (F15)

b7	b6	b5	b4	b3	b2	b1	b0

606-15

b7: INDICATE THAT A CLOCK IS SELECTED BY THE CDTM HIGHEST LEVEL
b7 = 0 (NO CLOCK SELECTED)
b7 = 1 (ONE OF 12 CLOCKS SELECTED)
b6 TO b3: THE CODE OF THE PORT SELECTED (0000 TO 1011)
b2 = BIT SET TO FORCE THE ALARMS
b1, b0 = RESERVED

FIG. 19H

FIELD #16 (F16)

b7	b6	b5	b4	b3	b2	b1	b0

606-16

b7: INDICATE THAT A CLOCK IS SELECTED BY THE CDTM MIDDLE LEVEL
b7 = 0 (NO CLOCK SELECTED)
b7 = 1 (ONE OF 8 CLOCKS SELECTED)
b6 TO b3: THE CODE OF THE PORT SELECTED (0000 TO 0111)
b2 = BIT SET TO FORCE THE ALARMS
b1, b0 = RESERVED

FIG. 19I

FIELD #17 (F17)

b7	b6	b5	b4	b3	b2	b1	b0

606-17

b7: INDICATE THAT A CLOCK IS SELECTED BY THE CDTM LOWEST LEVEL
b7 = 0 (NO CLOCK SELECTED)
b7 = 1 (ONE OF 12 CLOCKS SELECTED)
b6 TO b3: THE CODE OF THE PORT SELECTED (0000 TO 1011)
b2 = BIT SET TO FORCE THE ALARMS
b1, b0 = RESERVED

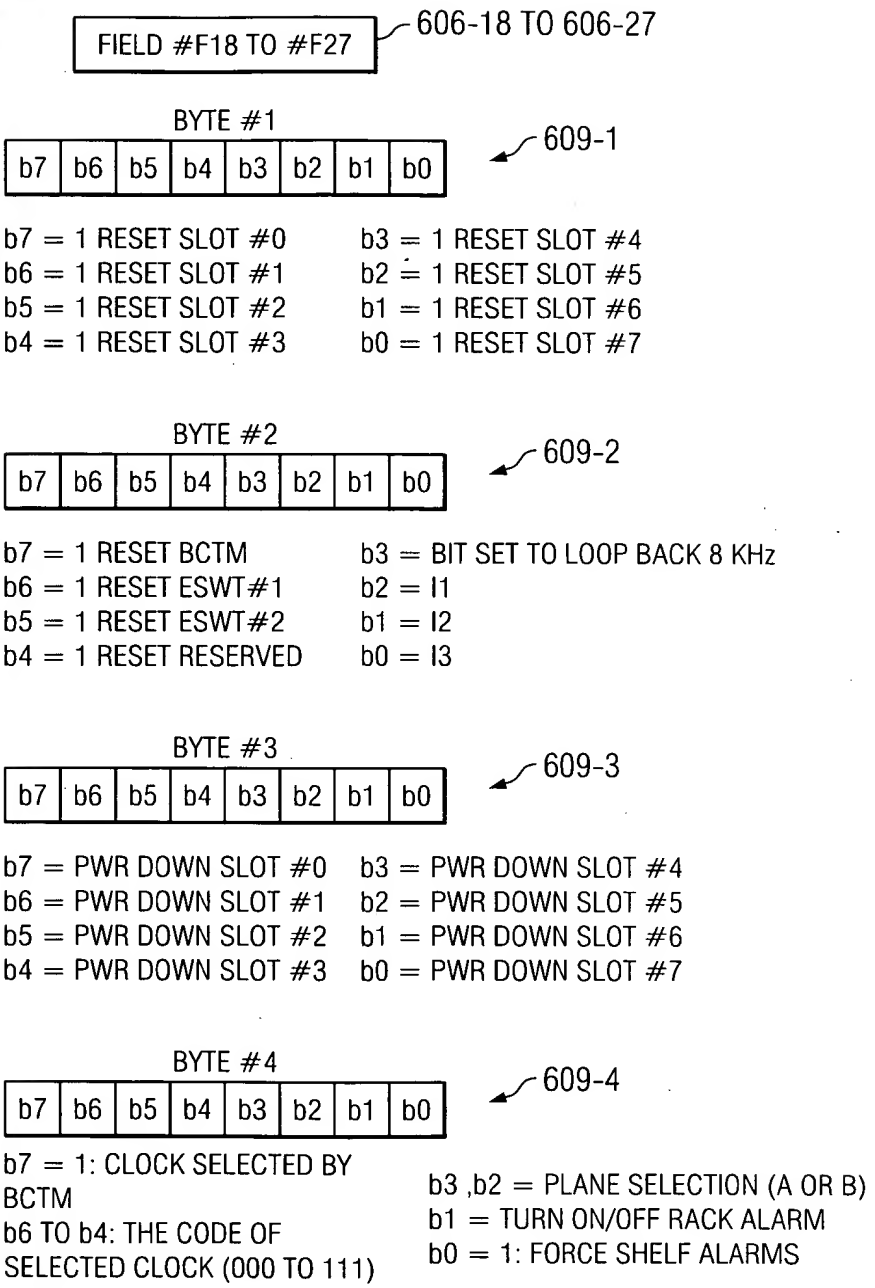

FIELD #F18 TO #F27
606-18 TO 606-27
BYTE #1
b7 b6 b5 b4 b3 b2 b1 b0
609-1
b7 = 1 RESET SLOT #0
b6 = 1 RESET SLOT #1
b5 = 1 RESET SLOT #2
b4 = 1 RESET SLOT #3
b3 = 1 RESET SLOT #4
b2 = 1 RESET SLOT #5
b1 = 1 RESET SLOT #6
b0 = 1 RESET SLOT #7
BYTE #2
b7 b6 b5 b4 b3 b2 b1 b0
609-2
b7 = 1 RESET BCTM
b6 = 1 RESET ESWT#1
b5 = 1 RESET ESWT#2
b4 = 1 RESET RESERVED
b3 = BIT SET TO LOOP BACK 8 KHz
b2 = I1
b1 = I2
b0 = I3
BYTE #3
b7 b6 b5 b4 b3 b2 b1 b0
609-3
b7 = PWR DOWN SLOT #0
b6 = PWR DOWN SLOT #1
b5 = PWR DOWN SLOT #2
b4 = PWR DOWN SLOT #3
b3 = PWR DOWN SLOT #4
b2 = PWR DOWN SLOT #5
b1 = PWR DOWN SLOT #6
b0 = PWR DOWN SLOT #7
BYTE #4
b7 b6 b5 b4 b3 b2 b1 b0
609-4
b7 = 1: CLOCK SELECTED BY BCTM
b6 TO b4: THE CODE OF SELECTED CLOCK (000 TO 111)
b3 ,b2 = PLANE SELECTION (A OR B)
b1 = TURN ON/OFF RACK ALARM
b0 = 1: FORCE SHELF ALARMS

FIG. 19J

FIG. 19K

BYTE #5

b7	b6	b5	b4	b3	b2	b1	b0

609-5

b7 TO b4 = BITS ALLOCATED FOR SSM CODE
b3 = BIT SET TO INHIBIT ERRORS REPORTING ON PLANE FROM PLANE A
b2 = BIT SET TO INDICATE ERRORS REPORTING FROM PLANE B
b1, b0 = RESERVED

BYTE #6

b7	b6	b5	b4	b3	b2	b1	b0

609-6

b7 TO b0 : BITS ALLOCATED TO TRISTATE
ALL BACKPLANE SIGNALS PER PBA

FIG. 19L

FIELD F29
BYTE #1

b7	b6	b5	b4	b3	b2	b1	b0

606-29

b7 = RESERVED
b6 = BIT ALLOCATED FOR HEARTBEAT
b5 = BIT ALLOCATED FOR CRITICAL INDICATOR
b4 = BIT ALLOCATED FOR MAJOR INDICATOR
b3 = BIT ALLOCATED FOR MINOR INDICATOR
b2 = BIT ALLOCATED FOR CRITICAL AUDIBLE
b1 = BIT ALLOCATED FOR MAJOR AUDIBLE
b0 = BIT ALLOCATED FOR MINOR AUDIBLE

FIG. 19M

FIELD #30 (F30)

b7	b6	b5	b4	b3	b2	b1	b0

606-30

b7 TO b0: BITS FOR PARITY CHECK (BIP -8)
BIP-8 IS AN "EVEN" PARITY CHECK

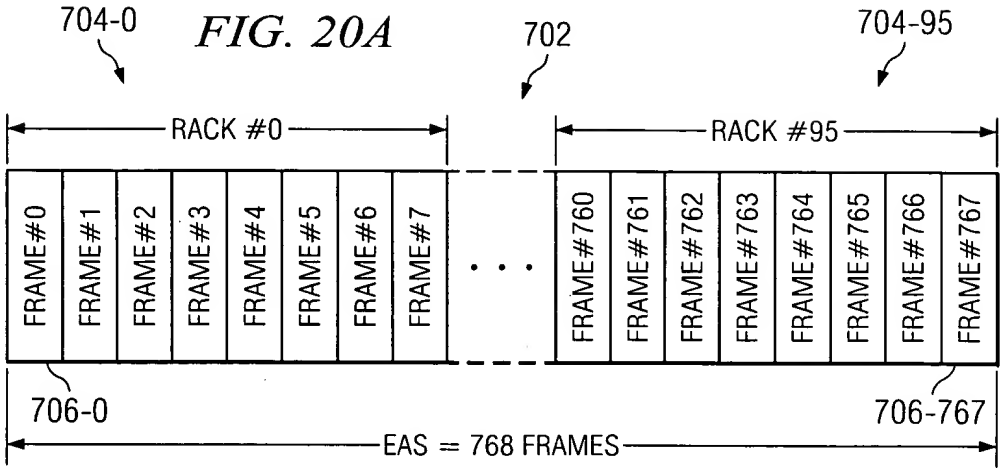


FIG. 20A

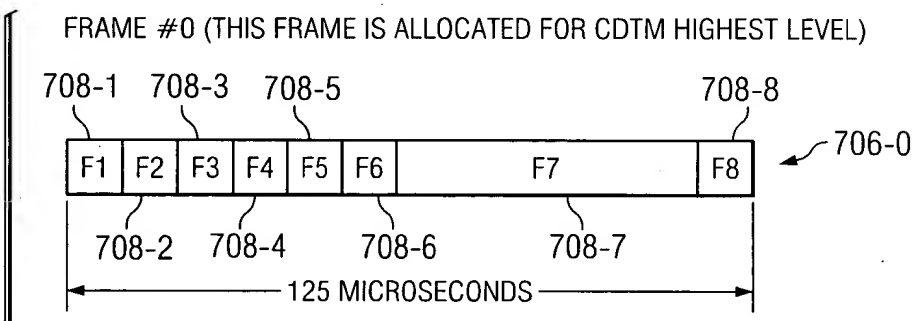


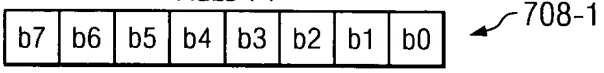
FIG. 20B

F1 = 1 BYTE ALLOCATED FOR ALLIGNMENT PATTERN
F2 = 1 BYTE ALLOCATED FOR MISC SIGNALS
F3 = 2 BYTES ALLOCATED FOR STATUS LOA
F4 = 2 BYTES ALLOCATED FOR INBOUND ERRORS (ONE BIT PER PORT)
F5 = 1 BYTE ALLOCATED FOR CLOCK SELECTION
F6 = 4 BITS ALLOCATED FOR BIP-4
F7 = 7.5 BYTES RESERVED
F8 = 1.5 BITS EMPTY FIELD (FORCED TO "0")

NOTE: ALL FRAMES # N x 64 (N = 1 TO 11) ARE EMPTY

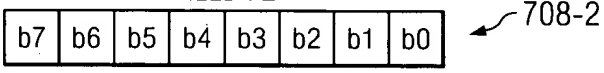
FIG. 20C

FRAME #0
FIELD F1



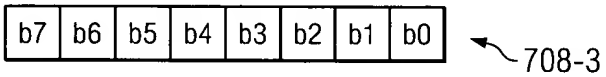
b7 TO b0 = "00111100" : PATTERN GENERATED BY EACH CDTM AND BCTM CARDS

FIELD F2



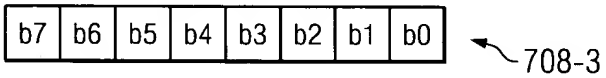
b7, b6 = RESERVED
b5 = BIT SET WHEN OUTBOUND SFI ERRORS ARE DETECTED
NOTE:OUTBOUND ERRORS:"TWO BITS VIOLATIONS" OR BIP-8 ONLY FOR FRAME #0 OF THE SFI
b4 = BIT SET WHEN ONE OF THE STATUS SIGNAL IS IN LOS (EXCEPT FOR THE UNUSED PORTS)
b3 = BIT SET WHEN THE SELECTED 8KHz IS IN LOC
b2, b1 = BIT ASSIGNED TO INDICATE THE LEVEL OF THE CDTM (11 FOR L1, 10 FOR L2 AND 01 FOR L3)
b0 = BIT ASSIGNED TO INDICATE THE PLANE (0 FOR A AND 1 FOR B)

FIELD F3 (BYTE#1)



b7 TO b0 = BITS ASSIGNED TO INDICATE STATUS LOA PORTS #0 TO 7

FIELD F3 (BYTE #2)



b3 TO b0 = BITS ASSIGNED FOR STATUS LOA #8 TO 12
b7 TO b4 = BITS ALLOCATED FOR CDTM LEVEL ASSIGNMENT

FIG. 20D

FIELD F4 (BYTE #1)

b7	b6	b5	b4	b3	b2	b1	b0

708-4

b7 TO b0 = BITS ASSIGNED TO INDICATE STATUS LOS ON PORTS #0 TO 7

FIELD F4 (BYTE #2)

b7	b6	b5	b4	b3	b2	b1	b0

708-4

b7 TO b0 = BITS ASSIGNED TO INDICATE STATUS LOS ON PORTS #8 TO 12

FIELD F5

b7	b6	b5	b4	b3	b2	b1	b0

708-5

b7 = BIT SET WHEN AN 8 KHz INPUT WAS SELECTED
b6, b5, b4, b3 = BITS ASSIGNED TO INDICATE WHICH 8KHz PORT WAS SELECTED
b2 = BIT SET WHEN A FORCED ALARM BIT WAS RECEIVED
b1 = BIT ASSERTED BY CDTM HIGHEST LEVEL TO INDICATE THAT A SYSTEM ALARM HAS OCCURED IN THE PREVIOUS EAS
b0 = ASSERTED BY CSTG IF A BIP-4 ERROR WAS DETECTED

FIELD F6

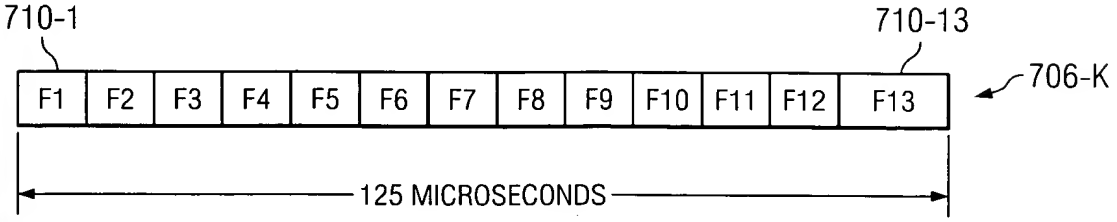
b3	b2	b1	b0

708-6

b3 TO b0 = BITS ASSIGNED FOR BIP-4

FIG. 20E

FRAME #1 + 64 x N (N = 0 TO 11) : THESE FRAMES ARE ALLOCATED FOR CDTM MIDDLE LEVEL
FRAME #1 + 8 x N (N = 0 TO 95) :THESE FRAMES ARE ALLOCATED FOR CDTM LOWEST LEVEL



CDTM MIDDLE LEVEL

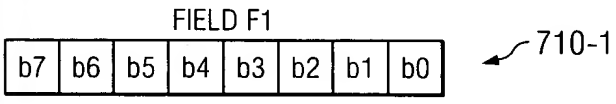
F1 = 1 BYTE ALLOCATED FOR MISC SIGNALS
F2 = 1 BYTE FOR CARD ID
F3 = 2 BYTES ALLOCATED FOR STATUS LOA
F4 = 2 BYTES ALLOCATED FOR INBOUND ERRORS (ONE BIT PER PORT)
F5 = 1 BYTE ALLOCATED FOR CLOCK SELECTION
F6 = 4 BYTES ALLOCATED FOR BIP-4

CDTM LOWEST LEVEL

F7 = 1 BYTE ALLOCATED FOR MISC SIGNALS
F8 = 1 BYTE FOR CARD ID
F9 = 2 BYTES ALLOCATED FOR STATUS LOA
F10 = 2 BYTES ALLOCATED FOR INBOUND ERRORS
F11 = 1 BYTE ALLOCATED FOR CLOCK SELECTION
F12 = 4 BITS ALLOCATED FOR BIP-4
F13 = 1.5 BITS EMPTY FIELD (FORCED TO "0")

FIG. 20F

FRAME #1 + 64 x N (N = 0 TO 11) : THESE FRAMES ARE ALLOCATED FOR CDTM MIDDLE LEVEL



b7 = RESERVED
b6 = RESERVED
b5 = BIT SET WHEN OUTBOUND SFI ERRORS ARE DETECTED
NOTE:OUTBOUND ERRORS: "TWO BITS VIOLATIONS" OR BIP-8 ONLY FOR FRAME #0 OF THE SFI
b4 = BIT SET WHEN ONE OF THE STATUS SIGNAL IS IN LOS (EXCEPT FOR THE UNUSED PORTS)
b3 = BIT SET WHEN THE SELECTED 8KHz IS IN LOC
b2, b1 = BIT ASSIGNED TO INDICATE THE LEVEL OF THE CDTM (11 FOR L1, 10 FOR L2 AND 01 FOR L3)
b0 = BIT ASSIGNED TO INDICATE THE PLANE (0 FOR A AND 1 FOR B)

FIG. 20G

FIELD F2

b7	b6	b5	b4	b3	b2	b1	b0

710-2

b7 TO b4 = BITS ASSIGNED TO INDICATE THE CDTM ID
b6 TO b0 = RESERVED

FIELD F3 (BYTE #1)

b7	b6	b5	b4	b3	b2	b1	b0

710-3

b7 TO b0 = BITS ASSIGNED TO INDICATE STATUS LOA PORTS #0 TO 7

FIELD F3 (BYTE #2)

b7	b6	b5	b4	b3	b2	b1	b0

710-3

b7 TO b0 = BITS ASSIGNED TO INDICATE STATUS LOA PORTS #8 TO 12 (WILL BE MASKED)

FIG. 20H

FIELD F4 (BYTE #1)

b7	b6	b5	b4	b3	b2	b1	b0

710-4

b7 TO b0 = BITS ASSIGNED TO INDICATE STATUS LOS PORTS #0 TO 7

FIELD F4 (BYTE #2)

b7	b6	b5	b4	b3	b2	b1	b0

710-4

b7 TO b0 = BITS ASSIGNED TO INDICATE STATUS LOS ON PORTS #8 TO 12 (WILL BE MASKED)

FIG. 20I

FIELD F5

b7	b6	b5	b4	b3	b2	b1	b0

710-5

b7 = BIT SET WHEN AN 8 KHz INPUT WAS SELECTED
b6, b5, b4, b3 = BITS ASSIGNED TO INDICATE WHICH 8KHz PORT WAS SELECTED
b2 = BIT SET IF A "FORCED ALARMS" BIT WAS RECEIVED
b1 = BIT ASSERTED BY CDTM MIDDLE LEVEL TO INDICATE THAT A GROUP ALARM HAS OCCURRED IN THE PREVIOUS ESFI
b0 = BIT ASSERTED BY CSTG TO INDICATE THAT A BIP-4 ERROR WAS DETECTED

FIELD F6

b3	b2	b1	b0

710-6

b3 TO b0 = BITS ASSIGNED FOR BIP-4 ("EVEN" PARITY)

FIG. 20J

FRAME# 1 + 8 x N (N = 0 TO 95) : THESE FRAMES ARE ALLOCATED FOR CDTM LOWEST LEVEL

FIELD F7

b7	b6	b5	b4	b3	b2	b1	b0

710-7

b7 = RESERVED
b6 = RESERVED
b5 = BIT SET WHEN OUTBOUND SFI ERRORS ARE DETECTED
NOTE:OUTBOUND ERRORS: "TWO BITS VIOLATIONS" OR BIP-8 ONLY FOR FRAME #0 OF THE SFI
b4 = BIT SET WHEN ONE OF THE STATUS SIGNAL IS IN LOS (EXCEPT FOR THE UNUSED PORTS)
b3 = BIT SET WHEN THE SELECTED 8KHz IS IN LOC
b2, b1 = BIT ASSIGNED TO INDICATE THE LEVEL OF THE CDTM (11 FOR L1, 10 FOR L2 AND 01 FOR L3)
b0 = BIT ASSIGNED TO INDICATE THE PLANE (0 FOR A AND 1 FOR B)

FIG. 20K

FIELD F8

b7	b6	b5	b4	b3	b2	b1	b0

710-8

b7 TO b0 = BITS ASSIGNED FOR CDTM ID

FIELD F9 (BYTE #1)

b7	b6	b5	b4	b3	b2	b1	b0

710-9

b7 TO b0 = BITS ASSIGNED TO INDICATE STATUS LOA PORTS #0 TO 7

FIELD F9 (BYTE #2)

b7	b6	b5	b4	b3	b2	b1	b0

710-9

b7 TO b0 = BITS ASSIGNED TO INDICATE STATUS LOA PORTS #8 TO 15

FIG. 20L

FIELD F10 (BYTE #1)

b7	b6	b5	b4	b3	b2	b1	b0

710-10

b7 TO b0 = BITS ASSIGNED TO INDICATE STATUS LOS ON PORTS #0 TO 7

FIELD F10 (BYTE #2)

b7	b6	b5	b4	b3	b2	b1	b0

710-9

b7 TO b0 = BITS ASSIGNED TO INDICATE STATUS LOS ON PORTS #8 TO 15

FIG. 20M

FIELD F11

b7	b6	b5	b4	b3	b2	b1	b0

710-11

b7 = BIT SET WHEN AN 8 KHz INPUT WAS SELECTED
b6, b5, b4, b3 = BITS ASSIGNED TO INDICATE WHICH 8 KHz PORT WAS SELECTED
b2 = BIT SET IF A "FORCED ALARMS" BIT WAS RECEIVED
b1 = BIT ASSERTED BY CDTM LOWEST LEVEL TO INDICATE THAT A RACK ALARM HAS OCCURRED IN THE PREVIOUS EAS;
b0 = BIT ASSERTED BY CSTG TO INDICATE THAT A BIP-4 ERROR WAS DETECTED

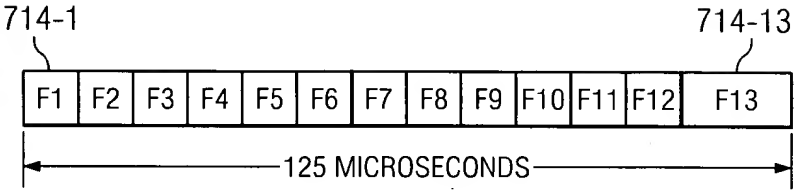
FIELD F12

b3	b2	b1	b0

710-12

b3 TO b0 = BITS ASSIGNED FOR BIP-4 ("EVEN" PARITY)

FRAMES # (2 TO 7) + 8 x N (N = 0 TO 95)
EACH OF THESE FRAMES ARE ALLOCATED FOR A PAIR
OF BCTM CARDS (A&B)



BCTM (A)

712-J

F1 = 2 BYTES ALLOCATED FOR ALARMS
F2 = 2 BYTES ALLOCATED FOR SHELF ID AND CLOCK SELECTION
F3 = 1 BYTE ALLOCATED FOR PBA "HEALTH"
F4 = 1 BYTE ALLOCATED FOR PBA "PRESENCE"
F5 = 1 BYTE ALLOCATED FOR MISC
F6 = 4 BITS ALLOCATED FOR BIP-4

BCTM (B)

F7 = 2 BYTES ALLOCATED FOR ALARMS
F8 = 2 BYTES ALLOCATED FOR SHELF ID AND CLOCK SELECTION
F9 = 1 BYTE ALLOCATED FOR PBA "HEALTH"
F10 = 1 BYTE ALLOCATED FOR PBA "PRESENCE"
F11 = 1 BYTE ALLOCATED FOR MISC
F12 = 4 BITS ALLOCATED FOR BIP-4

F13 = 1.5 BITS EMPTY FIELD (FORCED TO "0")

FIG. 20N

FIG. 20O

BCTM (A)
FIELD F1 (BYTE #1)

b7	b6	b5	b4	b3	b2	b1	b0

714-1

b7, b6 = BITS ALLOCATED FOR PSU #1 (A) ALARM
b5, b4 = BITS ALLOCATED FOR PSU #2 (B) ALARM
b3, b2 = BITS ALLOCATED FOR TWO FAN ALARMS
b1, b0 = BITS ALLOCATED FOR ESWT PWR ALARM

FIELD F1 (BYTE #2)

b7	b6	b5	b4	b3	b2	b1	b0

714-1

b7 = BITS ALLOCATED FOR BREAKER PANEL ALARM
b6 = BIT ALLOCATED FOR TEMP CONTROL
b5 = BIT ALLOCATED TO INDICATE PLANE A LOST (LOC, LOS, SFI LOF)
b4 = BIT ALLOCATED TO INDICATE PLANE B LOST (LOC, LOS, SFI LOF)
b3 = BIT ALLOCATED TO INDICATE "TWO BITS VIOLATION" OR BIP-8 ERRORS PLANE A (ONLY FOR THE FRAME ALLOCATED FOR THAT PARTICULAR RACK)
b2 = BIT ALLOCATED TO INDICATE "TWO BITS VIOLATION" OR BIP-8 ERRORS PLANE B (ONLY FOR THE FRAME ALLOCATED FOR THAT PARTICULAR RACK)
b1 = ONE BIT TO INDICATE THAT A FORCED ALARM BIT WAS RECEIVED
b0 = RESERVED

FIG. 20P

FIELD F2 (BYTE #1)

b7	b6	b5	b4	b3	b2	b1	b0

714-2

b7 TO b0 = HIGHER 8 BITS OF THE BCTM ID

FIELD F2 (BYTE #2)

b7	b6	b5	b4	b3	b2	b1	b0

714-2

b7 TO b4 = LOWER 4 BITS OF THE BCTM ID
b3 = BIT SET TO INDICATE THAT AN 8 KHz CLOCK WAS SELECTED
b2 TO b0 = BITS ALLOCATED TO INDICATE WHICH CLOCK WAS SELECTED

FIELD F3

b7	b6	b5	b4	b3	b2	b1	b0

714-3

b7 TO b0 = BITS ALLOCATED TO INDICATE PBA "HEALTH" FROM SLOT #0 TO SLOT #7

FIELD F4

b7	b6	b5	b4	b3	b2	b1	b0

714-4

b7 TO b0 = BITS ALLOCATED TO INDICATE PBA "PRESENCE" FROM SLOT #0 TO SLOT #7

FIELD F5

b7	b6	b5	b4	b3	b2	b1	b0

714-5

b7 = BIT SET TO INDICATE THAT A MISMATCH PLANE ASSIGNMENT WAS DETECTED
b6, b5 = BITS ALLOCATED TO INDICATE WHICH PLANE WAS SELECTED (A OR B)
b4 = BIT SET TO INDICATE THAT A "SYSTEM SLOT INSTALLED" BIT WAS RECEIVED
b3 = BIT SET TO INDICATE THAT SFI PLANES ALIGNMENT ERRORS ARE GENERATED
b2 = BIT SET TO INDICATE THAT THE SELECTED 8 KHz IS LOST
b1 = BIT SET TO INDICATE AN OR -ED FUNCTION OF ALL BCTM (A) ALARMS
b0 = BIT ASSERTED BY CSTG TO INDICATE THAT A BIP-4 ERROR WAS DETECTED

FIELD F6

b3	b2	b1	b0

714-6

b3 TO b0 = BITS ALLOCATED FOR BIP-4

FIG. 20Q

FIG. 20R

BCTM (B)
FIELD F7 (BYTE #1)

b7	b6	b5	b4	b3	b2	b1	b0

714-7

b7, b6 = BITS ALLOCATED FOR PSU #1 (A) ALARM
b5, b4 = BITS ALLOCATED FOR PSU #2 (B) ALARM
b3, b2 = BITS ALLOCATED FOR TWO FAN ALARMS
b1, b0 = BITS ALLOCATED FOR ESWT PWR ALARM

FIELD F7 (BYTE #2)

b7	b6	b5	b4	b3	b2	b1	b0

714-7

b7 = BIT ALLOCATED FOR BREAKER PANEL ALARM
b6 = BIT ALLOCATED FOR TEMP CONTROL
b5 = BIT ALLOCATED TO INDICATE PLANE A LOST (LOC, LOS, SFI LOF)
b4 = BIT ALLOCATED TO INDICATE PLANE B LOST (LOC, LOS, SFI LOF)
b3 = BIT ALLOCATED TO INDICATE "TWO BITS VIOLATION" OR BIP-8 ERRORS PLANE A (ONLY FOR THE FRAME ALLOCATED FOR THAT PARTICULAR RACK)
b2 = BIT ALLOCATED TO INDICATE "TWO BITS VIOLATION" OR BIP-8 ERRORS PLANE B (ONLY FOR THE FRAME ALLOCATED FOR THAT PARTICULAR RACK)
b1 = ONE BIT TO INDICATE THAT A FORCED ALARM BIT WAS RECEIVED
b0 = RESERVED

FIG. 20S

FIELD F8 (BYTE #1)

b7	b6	b5	b4	b3	b2	b1	b0

714-8

b7 TO b0 = HIGHER 8 BITS OF THE BCTM ID

FIELD F8 (BYTE #2)

b7	b6	b5	b4	b3	b2	b1	b0

714-8

b7 TO b4 = LOWER 4 BITS OF THE BCTM ID
b3 = BIT SET TO INDICATE THAT AN 8 KHz CLOCK WAS SELECTED
b2 TO b0 = BITS ALLOCATED TO INDICATE WHICH CLOCK WAS SELECTED

FIG. 20T

FIELD F9

b7	b6	b5	b4	b3	b2	b1	b0

714-9

b7 TO b0 = BITS ALLOCATED TO INDICATE PBA "HEALTH" FROM SLOT #0 TO SLOT #7

FIELD F10

b7	b6	b5	b4	b3	b2	b1	b0

714-10

b7 TO b0 = BITS ALLOCATED TO INDICATE PBA "PRESENCE" FROM SLOT #0 TO SLOT #7

FIG. 20U

FIELD F11

b7	b6	b5	b4	b3	b2	b1	b0

714-11

b7 = BIT SET TO INDICATE THAT A PLANE ASSIGNMENT ERROR WAS DETECTED
b6, b5 = BITS ALLOCATED TO INDICATE WHICH PLANE WAS SELECTED (A OR B)
b4 = BIT SET TO INDICATE THAT A "SYSTEM SLOT INSTALLED" BIT WAS RECEIVED
b3 = BIT SET TO INDICATE THAT SFI PLANES ALIGNMENT ERRORS ARE GENERATED
b2 = BIT SET TO INDICATE THAT THE SELECTED 8 KHz IS LOST
b1 = BIT SET TO INDICATE AN OR -ED FUNCTION OF ALL BCTM (B) ALARMS
b0 = BIT ASSERTED BY CSTG TO INDICATE THAT A BIP-4 ERROR WAS DETECTED

FIELD F12

b3	b2	b1	b0

714-12

b3 TO b0 = BITS ALLOCATED FOR BIP-4